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Lake Freight Matters.

It is fortunate for vessels owner that during the past winter, and even up to the present, Duluth shippers of wheat have taken practically all tonnage that has been offered to them at a rate of freight for first trips that is a little better than dollar ore. This demand for grain carriers in Duluth has been the supporting feature of the whole freight situation. It has given the owners of the best freight carriers on the lakes employment for their ships during the first month of navigation, and it happens that this month is most important to the vessel owners, on account of the delay in concluding ore contracts. If employment had not been furnished by this early grain movement from Duluth, the ore dealers who are now holding off in the matter of making ore contracts would probably not encounter the very stiff demand for \$1.10 on contracts which they meet with at present from all vessel owners.

A few days ago, when the Illinois Steel Co. began purchasing some ore, it was thought there would be no delay in closing up freight contracts at the rates demanded by vessel owners. Another waiting period has now set in, however, the ore men claiming that only the very best grades of low phosphorus ore have been sold, and that up to Thursday of this week big mines like the Norrie, Chandler and others of their kind had made no sales in large amounts.

Rockefeller Ships.

A large letter B on smoke stacks and on pennants will be the distinguishing mark of ships in the new Bessemer Steamship Co., or Rockefeller fleet. Mr. L. M. Bowers, manager of the company, says that a system of promotion with other advantageous features to captains will be adopted in the line. He does not go into details, on account of the great mass of applications which he has on hand from captains and engineers, but simply says that the company proposes to "do something handsome with their captains." In addition to Captains E. M. Smith, John Lowe, C. G. Ennis and R. E. Burns, who have been selected to command steamers in the line, it is announced that captains Samuel E. Lewis and W. J. Hunt will be given command of two of the new schooners. The first steamer, which will be launched at the Globe yard, Cleveland, next week will be called Sir Henry Bessemer. As soon as the necessary arrangements can be made with the treasury department the names of the four boats purchased for the line will be changed as follows: Pillsbury to Sir Henry Cort; Washburn to James B. Neilson; barge 102 to Sir John Whitworth; barge 103 to John Scott Russell. Officers of these four vessels are: Steamer Pillsbury, James Jackson, master, John Davidson, engineer; steamer Washburn, Charles F. Moody, master, Bion St. Barnard, engineer; barge 102, John Gills, master; barge 103, Alex McArthur, master.

Fire Boats.

Nearly all of the large cities of America that have important harbors are provided with fire boats. Thus the list includes Chicago with four boats of 10,300 gallons capacity per minute; Cleveland, two, 9,800 gallons; Buffalo, two, 9,000 gallons; Baltimore, one, 5,000 gallons; Boston, two, 12,463 gallons; Brooklyn, two, 8,970 gallons; New York, three, 19,900 gallons; Philadelphia, four, 10,000 gallons. London, England, has twenty-two fire boats of 16,500 gallons per minute, but they are largely floats, towed by tugs, and are not as effectual as the fire-fighters in American cities, as the streams which they throw are of small diameter. Nearly all of the fire boats in this country, are of the tug kind, equipped to tow a burning vessel away from a pier or to remove vessels in danger. Many of them are also suited to crushing ice and performing other necessary service within a harbor. Heads of fire departments who have had a great deal of experience with fire boats say that streams from nozzles less than 1½ inches in diameter are inefficient against a hot fire, and that one large stream is much more useful than the same quantity of water divided into smaller ones. But provision should be made, they say, for many small streams, as there are cases, as, for instance, in preventing the spread of a conflagration, when it is necessary to use them, so as to attack the fire simultaneously at many points, and to keep the adjoining property thoroughly wet. It has also been proved that boats exceeding 110 feet in length are unhandy for fire service. This is especially true in cities situated on narrow and crooked rivers.

Improvements in the docks of both the Northwestern and Wisconsin Central railway companies at Ashland will be entirely completed by the time the ore shipping business is fully opened up.

Ship Yard Matters.

The American Steel Barge Co. will probably build at West Superior, on its own account, one steamer to replace the two barges sold to John D. Rockefeller, but it is not probable that any new work will be begun at West Superior until the two new Rockefeller ships are finished, which will be late in the fall. The proposed second dry dock at West Superior is also a matter of the future. For some time past the owners of the whaleback passenger steamer Christopher Columbus have been trying to sell her to eastern parties, and Captain McDougall's inspection of the St. Lawrence canals some time ago had reference to the transfer of the Columbus to the coast, as well as the removal of the whaleback steamer Colby and three barges from the coast to the lakes. But the Colby, as well as the barges on the coast, are now small vessels when compared with modern lake ships, and it is quite probable that the barge company would rather sell them than undertake the expense of bringing them to the lakes.

John Haug of Philadelphia, who is connected with Lloyd's classification society, seems to enjoy a very fair share of the business accorded to naval architects that are not associated with any of the ship building companies. Just now he is superintending for the owners the construction of the two Rockefeller steamers that are being built by the Globe Iron Works Co., Cleveland, as well as the steamer and two schooners that Wheeler & Co. are building for Mr. Rockefeller. He designed the new oil barge which the Union Dry Dock Co., Buffalo, is building for the Standard Oil Co., and also the Standard Oil Co's new seagoing tug, for which a contract has just been let. The Red D line passenger and freight steamer Curacao, built for service between New York and Curacao, is of his design, and also the freight and passenger steamer Atlanta, which the Cramps are now completing for the Southern Railway.

Launches in the several ship yards around the lakes will now occur in rapid succession. At Wheeler & Co's yard, West Bay City, the steamer City of Bangor for Eddy Bros. is about ready for commission and the L. C. Waldo is completed, while the six other vessels under contract are all on the stocks. The steamer E. W. Oglebay, building at this yard for D. C. Whitney of Detroit, will be launched about May 1. The first of the Rockefeller steamers at the Globe yard, Cleveland, will also be launched about May 1. About the same time, or following these, the Detroit Dry Dock Co. will have ready for launching the steel lumber carrier building for C. R. Jones & Co. of Cleveland and the big 400-footer Senator for the Wolverine Steamship Co. At West Superior the barge company is expecting to launch the Whaleback steamer Frank Rockefeller on Saturday of this week, and her consort, barge 137, a few days later.

It is now thought that the Globe Iron Works Co., as well as Wheeler & Co., the Detroit Dry Dock Co., American Steel Barge Co. and Chicago Ship Building Co. will all be a month to six weeks behind time on delivery of the Rockefeller ships. The Cleveland Ship Building Co. may escape demurrage on account of having only a steamer to build for Mr. Rockefeller and also on account of having been allowed a later date of delivery than any of the other builders.

The steamer G. N. Orr, launched at South Chicago on Saturday last, is much like the steamer Chili, owned by M. M. Drake and others of Buffalo, and built by the Cleveland Ship Building Co. The Orr is, however, somewhat larger than the Chili, as her over all length is 340 feet, keel 326 feet, beam 42 feet and depth 26 feet. She is suited to package freight service and is owned by C. W. Elphicke and others of Chicago.

Capt. John Mitchell of Cleveland has been figuring with ship builders the last two or three weeks past on a big steel steamer to come out next season, but it is understood that negotiations are now off and that the ship will not be built.

Information from a source that seems quite reliable is to the effect that the Detroit Dry Dock Co. is to be paid \$256,000 each for the two big steamers which they are building for Mr. John D. Rockefeller.

S. M. Fisher is the name selected for the steel tug which the Craig Ship Building Co. of Toledo is building for the Michigan Car Ferry Transportation Co.

The tug building at Heath's yard, Benton Harbor, Mich., for Graham & Morton was launched Tuesday.

An indication of prosperity at the Union Iron Works, San Francisco, is the erection of two substantial buildings—an office building and steel boiler shop—that are to each involve an outlay of \$50,000.

Notes About Dry Docks.

The dry dock can be counted as one among the many aids to commerce that have been developed during the century. The early navigators hauled their boats on shore to repair them; and a modification of this method is still in use in the appliance called the ship railroad, and we usually find that wherever there is today a dry dock, its site has been previously used as the location for a ship railway. The dry dock, as we now know it, seems to have been developed from the "grave." In England today it is known as a graving dock. Where the tides were available, the vessels were beached at high tide, repaired while the tide was out, and floated at the next tide. This method was followed by the excavation of a bed in which to place the ship to be repaired, called a "grave." After the vessel was in place and the tide ran out, the "grave" was closed at the outer end by an embankment thrown across it; this allowed continuous work on repairs. This method is still in use. The Petrel, of the United States navy, was docked at New Chwang, Manchoorio, China, in this way during the winter of 1894-5. The Great Eastern was docked at Milford Haven in this way. The Chinese used the method four hundred years ago. Where the tides raised to a sufficient height, docks were constructed so that ships could be floated into them at high water, and the receding tide left the dock dry. No gate was used, the only requisite being a sufficient foundation to support the weight of the ship and provision made for shoring. The introduction of a movable gate to shut out the water from the tidal docks was the next step in advance, the gates being substantially the same as the swinging gates which are now in canal locks. The floating gate or caisson was invented by Sir Samuel Bentham and was first used in a tidal dock at Portsmouth (England) navy yard. Finally, by the introduction of steam pumping machinery for removing the water from the dock, we have the dry dock of today.

The first floating dock is believed to have been constructed about the time of Peter the Great, a North Country captain having floated his ship into an old hulk, pumped the water out and made his repairs. The name of the hulk was Camel, and this name the English still give to the pontoons that are used for raising ships. The floating dock was built in England about 1785. An American invention called a screw dock was built at New York in 1776. This dock consisted of a cradle into which the ship floated and the cradle and ship were then raised by screws attached to the cradle and bearing upon the tops of piles driven on each side of the structure. The dry dock at the Brooklyn navy yard, the largest in this country at the time it was constructed, was commenced in 1841 and completed in 1851, at a cost of about \$2,250,000. This dock was constructed of granite on a foundation of piles and concrete.—A. V. Powell, dry dock engineer, Chicago.

Finished Parts of the 20-foot Channel.

Now that Lieut. Cavanaugh of the United States army engineer corps, Detroit, who is in charge of the 20-foot channel work, is doing all in his power to make parts of the new deep channel available for navigation during the present season of navigation, vessel masters should exercise the necessary care that must be used in the completed parts of these channels. Regarding the new cuts at the foot of Lake St. Clair and at Bar point, Lieut. Cavanaugh has issued the following directions, which he asks the REVIEW to publish:

"Owing to unavoidable delay in dredging operations, it is impossible to throw open the new ship-channel from the head of Detroit river into Lake St. Clair for the full width of 800 feet, but a channel 15,000 feet long and 400 feet wide at the upper end in Lake St. Clair, widening to 800 feet at the head of the Detroit river, has been buoyed for the use of deep draft vessels. The point at which this channel is to be entered from the eastward by boats bound down and to be left by boats bound up, is marked by the last red buoy numbered 16. At night the channel will be lighted by three lights on its eastern edge, placed upon pile clusters and maintained by the Lake Carriers' Association. The light-ship will shortly be moved to the eastern edge of the channel near the last red buoy numbered 16, and at night will mark the point where the channel is to be entered by boats bound down and left by boats bound up. The channel thus buoyed out will allow a draft at least 18 inches greater than can be carried through the Detroit river at Ballard's reef and below the Lime-Kiln crossing, and no other part of the new channel should be used for the present. Therefore, vessels bound up coming abreast of the last red buoy, or at night abreast of the light-ship, should turn sharply to the right until clear of the dredged cut, and similarly, boats bound down should keep to the eastward of the dredged cut and until nearly abreast of the last red buoy, or at night of the light ship, and then turn sharply into the dredged cut. When passing the dredges and sweeping scows which are at work immediately west of the buoyed channel boats should check down so as to interfere with the work as little as possible. The supposition upon which this part of the channel is thrown open to navigation is that vessel men will show a proper appreciation of the trouble and inconvenience taken to give better water facilities at this point, and it is expected that they will use only that portion of the dredged cut buoyed out as above described and will also

endeavor, by checking their speed and keeping near the eastern edge of the channel, to interfere with the work as little as possible."

"The eastern half of section 8 of the ship-channel at the mouth of the Detroit river will also be thrown open to navigation, and as soon as the requisite authority is obtained from the Canadian government for the use of buoys, the eastern edge of the channel will be buoyed out. The black buoys marking the old channel will remain in their present position so that boats can still use the old channel. The eastern half of section 8 gives them a channel 400 feet wide, and in using it boats should keep within this distance of the line of buoys, as the western half has still much work to be done upon it and should not be used at present."

Stocks of Grain at Lake Ports.

The following table, prepared from reports of the Chicago board of trade, shows the stocks of wheat and corn in store in regular elevators at the principal points of accumulation on the lakes on April 18, 1896:

	Wheat, bushels.	Corn, bushels.
Chicago.....	16,474,000	5,942,000
Duluth.....	14,547,000	145,000
Milwaukee.....	397,000
Detroit.....	227,000	13,000
Toledo.....	527,000	580,000
Buffalo.....	872,000
Total.....	33,044,000	6,680,000

As compared with a week ago, the above figures show at the several points named an increase of 9,490,000 bushels of wheat and a decrease of 638,000 bushels of corn.

On April 18, there was afloat at Chicago 480,000 bushels of wheat, 2,507,000 bushels of corn, 467,000 bushels of oats and 25,000 bushels of rye; at Duluth, 512,000 bushels wheat, and at Milwaukee 53,000 bushels wheat.

Transfers of Vessel Property.

Transfers of vessel property noted in different parts of the lakes recently are as follows: Steamer F. & P. M. No. 1, from Flint and Pere Marquette Ry. Co. to Gregory Hurson of Milwaukee; steamer Sir. S. L. Tilley and schooner Merritt, Capt. S. Neelon of St. Catherines to R. O. McKay of Hamilton, Ont., \$40,000; excursion steamer Columbia, James E. Conlon and others of Buffalo to James Ash of same place, \$16,500; steamer M. C. Neff, Hines Lumber Co. of Chicago to Cleveland parties, \$15,000; schooner Glad Tidings, Capt. Henry Bndy, sailor evangelist, of Chicago, to F. J. Keightley of St. Ignace, \$3,900; schooner Mary, Capt. Arthur E. Dow of Manitowoc to Joseph Challee and others of Kewaunee, \$225; schooner Emma Banner, John Joys to Christ. Pederson of Milwaukee, one-half, \$200; schooner Oneida, Gunda Hansen of Washington Island to Geo. Hansen of Milwaukee, one fifth, \$700; schooner Kewaunee, C. A. Chamberlain of Detroit to Winand Schlosser of Milwaukee, \$3,000; schooner Narragansett, E. G. Hazelton and E. L. Grant of Waukegan to Capt. John Leisk of Milwaukee, \$2,000; tugs George Cooper and Pacific, Wisconsin Dredge & Dock Co. to E. J. Stokes of Sheboygan, Wis., \$6,500 and \$2,000 respectively; schooner Vega, C. M. Johnson to Louis Olson of Sheboygan, one-half, \$1,500; tug Crawford to Barry Bros. of Independent Tug Line, Chicago; schooner John Kelderhouse, Lyman Feltis of Chicago to W. H. Hargrave and James O. Eaman of Detroit, \$12,000; schooner John Breden to J. M. Jones and others, Detroit, \$1,200; tug Howard, Capt. Singer of Duluth to Michigan Log Towing Co. of Bay City, in trade for tug Waldo A. Avery.

Department of Commerce.

Although it is not probable that the present congress will pass Senator Frye's bill providing for a department of commerce, there is no question of a steady growth of opinion favorable to the new department. Up to this time agitation of the subject has been confined largely to commercial bodies that are particularly interested in water commerce. This is natural, as it is proposed to have the various bureaus of the treasury department that are devoted to shipping transferred to the new department. Now another influential body, the newly organized National Association of Manufacturers, is out with a circular favoring the new department, on account of the proposition to have manufactures included in it. The manufacturers present some very strong arguments. They show that although there is a department of agriculture, that interest is not more important than the manufacturing interests of the country. Census figures are quoted to show that while the amount of money invested in agriculture has increased four-fold during forty years past, the capital invested in manufacturing enterprises has been multiplied nearly twelve times in the same period. Half a century ago the aggregate value of all the products of manufacturing industries in the United States was only five-eighths of the value of the agricultural products. The growth of industry has been so rapid, however, that manufacturing outstripped farming thirty years ago, and the last census showed that the value of manufactured articles was more than three times the value of all that agriculture yielded.

Short History of Lake Dry Docks.

The first dry dock constructed on the American side of the great lakes was built at Buffalo. In 1836 there was a ship railway at Ohio street, Buffalo, built by Bidwell & Banty. A capstan turned by horses was the power used. In the same city, about the same time, another ship railway was constructed, where the Union dry dock is now located, and operated by steam power. This last was replaced in 1838 by a dry dock large enough to dock any vessel then navigating the lakes. The depth of water on the sill was 8 feet. This dock was enlarged in 1844 and again in 1848 in order to accommodate vessels of increased size.

A ship railway was built in Cleveland, in 1844 by Tisdale & Johnson; a floating dock in 1847, and in 1870 a dry dock was built by Stevens & Presley. This dock was 250 feet long on the blocks with 10½ feet of water on the sill. In 1876 this dock was lengthened to 290 feet, and in 1892 the old dock was taken out and the present Cleveland Dry Dock Co's dock built. This dock is 360 feet in length and has 20 feet water on the sill. In 1883 the Ship Owners Dry Dock Co. of Cleveland was organized. The same year they built a dry dock at the head of the old river bed, 340 feet on the blocks with 16 feet of water on the sill. This last dock the company are now lengthening to 440 feet on the blocks, the depth of the entrance remaining the same. This company also owns and operates a dock built in 1890, having an effective length of 300 feet, with 13½ feet of water on the sill. The same pumping plant discharges the water from both these docks.

At Detroit in 1851, Lew, John and Hiram Ives built a dock at a point now known as the foot of Swain avenue. Particulars as to the size of the dock are not available. The second and third docks at Detroit were constructed by John Clark in 1855 and 1857, respectively. These last two docks are still in use. Campbell & Wolven built a dock in 1859, and Campbell & Owen another in 1866. This last mentioned dock was removed and the principal dock now owned and operated by the Detroit Dry Dock Co. was built on its site in 1892.

Port Huron has three docks. The largest, owned by Dunford & Alverson, was built in 1891. At Bay City, Mich., Church & Co. converted the hulk of the once famous passenger steamer Western World into a dry dock in 1871. This dock was operated until 1877, when a ground dry dock was constructed; it having been found that the clay upon which the old hulk rested was firm enough to withstand the pressure of the water, a slip was dug 250 feet long and a gate-way constructed, but no sides or foundation was put in. The only dry dock on the American side of Lake Ontario is located at Oswego. This dock was built in 1865 by George Goble. It is 175 feet long and has ten feet of water over the sill.

The dock of the American Steel Barge Co. at West Superior, Wis., was built in 1891, and is the only one on Lake Superior. It is the longest dock on the lakes, being 500 feet on the blocks.

At Chicago, Conner in 1848 had a set of ways at Van Buren street, where vessels could be pulled up. In 1848-9 Doolittle & Miller built boxes to raise boats of 300 to 400 tons register. The first dry dock in Chicago was built in 1854-5. George Wicks started the work in 1854, but he sold his interest to Doolittle & Miller, and the dock was completed by them in 1855. This dock is still in use. It is known as Miller Bros.' dock No. 1, and is located at North Halstead street bridge. Its length is 275 feet and water on sill, 8 feet. Miller Bros., successors to Doolittle & Miller constructed a dock in 1871-2, located alongside their No. 1 dock. This dock is 310 feet in length and will admit vessels drawing 14 feet of water. A dock was built at Polk street in 1863, 250 feet long. This dock was lengthened in 1870 to 305 feet and abandoned and filled up about 1888. E. M. Doolittle constructed a dock at an early day on the West Side. This dock, now abandoned, was 235 feet long and would admit boats drawing 12 feet. The dock of the Chicago Ship Building Co. at 101st street and Calumet river is one of the latest docks built on the lakes and is among the largest.

Col. Ludlow on European Canals.

Before leaving London on his return to this country, Col. Wm. Ludlow, U. S. A., who was instructed by the United States government to inspect the various European canals, with a view of reporting their working in comparison with the proposed Nicaragua canal, said regarding his inspection: "The inspection proved a laborious, though interesting undertaking. I have thoroughly inspected the Suez canal, and the officials of that company did everything to facilitate my inquiries, and placed a steam yacht at my disposal that I might thoroughly see its working. It is a wonderful success. There is hardly any other enterprise in the world regarded purely as a commercial investment, that is yielding so large a return. Its profits must be enormous. In fact no one knows exactly what they are. Take England's share in the concern, for instance. While England does not own a majority of the shares, yet its income from this source alone would suffice to maintain some kingdoms. You know that the canal was not a success at first, but now it proves one of the most useful and successful schemes of the century. I

also went to Greece and witnessed the working of the Corinth canal. While entirely different both in aim and construction, it is still a success. It is a most interesting work. The original scheme for a canal here was conceived in the time of Nero, and one may yet see the original test pits that were made by the Romans. I also thoroughly inspected the new German canal. This is a wonderful affair, and Germany can now use her navy in both seas. I had an audience of the Emperor in Berlin, and told him that the German canal was the only one that had been constructed within the original estimates of costs. From Germany I went to Holland and thoroughly inspected their system of waterways. The Manchester canal, although far from commercial success as yet, will eventually prove a great advantage to the city of Manchester."

It is said that opinions expressed by Col. Ludlow in England as to the future of the Manchester canal have actually had a favorable effect on the financial standing of the canal company. Asked as to his opinion of the feasibility of the Nicaragua canal after viewing the workings of the others, Col. Ludlow said: "I am more than ever convinced that it is feasible. But until my report is submitted I am unable to make any detailed statement."

Davidson Fleet.—Appointments.

Aside from his interest in the car ferries of the Wisconsin & Michigan Railroad Co., and the three boats which he has chartered to Palmer & Co. and Philip Minch of Cleveland, Capt. Davidson will have thirteen vessels on the lakes the coming season. This number includes the two wooden steamers and three tow barges now building at West Bay City. It is expected that all five of the new boats will be ready for sea before August 1. The schooners, one of which is about ready for launching, will be named Armenia, Abyssinia and Algeria. Names of the steamers have not yet been announced. Captains of the fleet, aside from the two new steamers, are as follows: Steamers—Rappahannock, Hugh Stevenson; Sacramento, C. S. Furey; Shenandoah, G. W. Flood; Nicaragua, W. J. Coleman; White & Friant, Jas. P. Stewart; Monohansett, no appointment. Schooners—Armenia, Carl Johnson; Abyssinia, A. Gustafson; Algeria, Martin Elnen; Granada, Geo. W. Starkey; Paisley, E. J. Starkey; Grampian, Peter Overrood; Lizzie A. Law, Capt. Ryerse.

The boats chartered to Palmer & Co. and Philip Minch are the steamer Robert Holland and schooners Aberdeen and Dundee. The Robert Holland will be commanded by Capt. R. Cazallis, and will tow the schooners Minch and Warmington. The Aberdeen will tow with the steamer John N. Glidden and the Dundee with the H. A. Tuttle.

Appointments of vessels managed by O. W. Blodgett, Bay City, Mich., which were contained in a recent issue of the REVIEW, included the name of Wallace Allen as master of the schooner Mary Woolson, but a correction is necessary as the Woolson will be sailed by Wm. Barret. The name of the captain of the schooner Goshawk of the same fleet is M. Nagle.

Extra Wages to Seamen—Admiralty Matters.

In the fall of 1894, the barge Potomac, lumber laden, bound from Parry Sound to Tonawanda encountered a violent gale. The barge broke from her tug, drifted and became waterlogged, and was taken into Taburney, Canada. To free her it was necessary to remove part of her cargo, and men from ashore were employed to assist. The crew refused to assist until the master agreed to give them extra compensation. The amount promised was paid to all but two, who libeled the vessel. No reason was given for the discrimination. District Judge Coxe (northern district of New York) held that the service being partly ashore and the vessel in port, the case was removed from the general rule denying extra compensation to seamen for services as such, and entered a decree for the libelants. The circuit court of appeals, second circuit (72 Federal Reporter, 535) reversed this and held that while the vessel was in port, it was a port of refuge, and the duty of the seamen to look to the safety of property continual; that the service which they refused to perform without agreement for extra compensation was necessary to enable the barge to reach her destination and earn freight, and an agreement for extra pay under such circumstances was void.

The United States court of appeals has in part reversed the decision of Judge Swan in the cases of the tug Washburn, its owner, John Hurley, and Engineer William Robinson against the steamer City of Mackinac. On the night of May 28, 1892, the steamer ran down the tug Washburn in the Detroit river just above Walkerville, Ont., sinking the tug and drowning the two men. The actions against the steamer were for damage to the tug, which was afterward raised, and for damages for the death of the two men, but Judge Swan dismissed all three. According to the new decision, the steamer is assessed one-half the damage to the tug, which will be but a small amount; dismissed the claim of Hurley's representatives on the ground that he was in part responsible for his own, but holding the steamer wholly responsible for Robinson's death. The matter of fixing the amount to which Robinson's estate is entitled to for his death is left to a commission.

Officers of the Grand Lodge, Ship Masters' Association.

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DUNCAN STALKER.

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Officers of the Grand Lodge, Ship Masters' Association.

Two groups of officers and members of the grand lodge, Ship Masters' Association, appear on this page. The first group contains the principal officers, while in the second group are the subordinate officers and members of the association who represented the different lodges as delegates in the last annual meeting at Washington. These engravings were prepared for the directory of the association, which is being prepared under the direction of Capt. W. A. Collier of Cleveland, and which will be published about May 1.

Government Ship Building Contracts in England.

One very excellent reason why government contracts in England, at least those pertaining to naval construction, are not popular with, nor especially sought after by, some of the foremost engineering firms of that country, has been furnished by the experience that Messrs. Yarrow & Co., the well-known torpedo boat builders, have more recently gone through with the British admiralty, and which is about as unique as it is commendable. Messrs. Yarrow & Co., as is pretty generally known, were the first, several years ago, to turn out vessels of the torpedo boat destroyer type. The success attained by these was remarkable at the time, and more recently, therefore, it was determined by the admiralty to order a large number of them, of the latest and still further improved Yarrow design, and to extend the orders for them to builders of larger vessels in the northern ship building districts, who, it is admitted, did not then have much experience with craft of this kind. Instead, however, of inviting these newer firms to submit designs of their own, the admiralty, with, no doubt, laudable intentions so far as the good of the department and of the country was concerned, but with entirely unwarrantable freedom with some one else's property, proceeded to have Messrs. Yarrow's drawings—which had been confidentially submitted—traced and distributed among those other establishments. It is not to be wondered at that Messrs. Yarrow have most emphatically protested against this strange proceeding, which may well put other builders of original machinery on their guard when dealing with the government. Had the latter acquired property

rights in the drawings there might have been no question as to its privilege to make any use of them that it thought proper. As it is, however, the admiralty used documents confidently submitted to them as though they were their own. Certainly, no argument seems necessary in this case to convict them of having been guilty of a practice which every right-thinking contractor will condemn, even though he may have profited by it. What the admiralty has done in this instance appears to be but a sample of other similar methods followed by it for years, less seriously aggravating, perhaps, but none the less unworthy of a great government. The result is already apparent by the preference which is shown by some of the prominent English contractors for the work of other governments, and this preference may be expected to increase largely if the universal distribution system of one contractor's drawings among his competitors is to be followed in future.—Cassier's Magazine.

The REVIEW has been preparing some information regarding bridges at various lake ports, and in doing so it has been necessary to write a number of city and town officials. An answer to one of these letters received from Mayor Walter Scott of Erie, Pa., is as follows: "I am happy to inform you that the City of Erie is not bothered with a single bridge through which boats have to pass. Erie is blessed with a beautiful natural harbor extending the full length of the city on its northern boundary, and does not depend on a troublesome creek running through the city, to bridge and fight about." Erie is certainly fortunate in possessing a great harbor. Her share of the ore business would probably have been somewhat greater than it is, but for advantages in location enjoyed by a few other Lake Erie ports. The Pennsylvania Company has been waking up considerable of late, however, and Erie will have this year three modern ore docks with capacity fully one-third greater than that of last year.

J. M. Egan, who has been connected with the Chicago, Milwaukee & St. Paul Railway, has been selected for the vice-presidency of the Lake Superior & Ishpeming Railway, the new ore road in which stockholders of the Lake Angeline, Cleveland-Cliffs and Lake Superior Iron companies are interested.

Death of Capt. W. H. Cowin.

As in all business pursuits, there are a few vessel masters on the lakes whose services are in demand from all owners; men who are known to be in the first rank, and who have proven themselves capable of handling the best of modern ships. Capt. Wm. Cowin of Cleveland, who was drowned while boarding his boat in South Chicago a few days ago, was one of these



men. The drowning of Capt. Cowin was caused by the overturning of a ladder on which he was crossing to his steamer, the John Mitchell, from the schooner San Diego. Capt. Cowin was born on the Isle of Man, and had followed the sea from boyhood. He had commanded the Mitchell for the last three seasons. The first steamer he sailed was the D. W. Rust, after which he took command of the steamer George Spencer. He was forty-six years old, a widower, and leaves four children. The funeral in Cleveland on Tuesday last was attended by members of the Ship Masters' Association. The pallbearers were Captains W. A. Collier, H. Stone, J. Thompson, C. La Framboise, J. Lowe and C. Hunt.

The New York Sun has taken up the question of the government providing vessels of war on the lakes to protect such important cities as Chicago, Cleveland, Buffalo, Detroit and other places. With its usual regard for facts in news matters, the Sun does not plunge into the error of declaring that Canada has gunboats or armament with which to equip gunboats on the lakes. Neither is it claimed that England has an effective fleet of small vessels that could be gotten through the unfinished St. Lawrence canals. The plain argument is made that half a dozen cities on the American side of the lakes contain more destructible wealth than the whole dominion, and that the situation is entirely changed from what it was when the United States and Great Britain agreed that neither country should keep a large naval force on these waters.

For three months or more past the REVIEW has been publishing lists of captains and engineers of vessels owned in all parts of the lakes. The work is now complete and these lists, just as they appeared in the REVIEW, have been collected and printed in pamphlet form. The pamphlet contains the names of hundreds of captains and engineers, as well as the names and post office addresses of all the leading corporations and firms that control vessel property. These small books are offered for sale by the REVIEW and will be sent to any address upon receipt of \$1.

The chart of distances between lake ports, which was recently published by the hydrographic office, is the only reliable distance chart in existence. Distances are in statute miles. This chart is especially serviceable in the offices of vessel owners where book records of miles run, and costs of various supplies per ton per mile are kept. It sells at 50 cents and may be had from the MARINE REVIEW, Perry-Payne building, Cleveland.

A telegram from Duluth announces that about one hundred million feet of lumber has been sold at that point to go forward by lake this season.

In Support of Our Ship Building Programme.

The naval intelligence office has been giving out some figures to show that the proposed increase of four battleships and fifteen torpedo boats in the United States navy is not excessive and can not be attributed to jingo policy. The navy officials claim that we are not even keeping pace with the maritime powers, and present the following table in proof of their statement:

	Naval budget for 1895-96.	Population.	Amount per capita.
England	\$91,012,156.70	38,105,000	\$2.65
Netherlands	6,196,221.87	4,450,870	1.39
France	52,180,680.00	38,219,000	1.35
Denmark	2,046,291.22	2,172,205	0.93
Italy	17,922,703.42	29,699,800	0.60
United States	29,416,077.00	70,000,000	0.42
Germany	19,889,037.41	49,421,100	0.40
Spain	4,529,732.00	17,551,000	0.25
Russia	26,902,624.50	113,355,000	0.24
Norway	564,944.00	2,001,000	0.23
Austria	6,501,337.64	41,828,000	0.15
Turkey	2,860,000.00	33,560,000	0.08

The above order of arrangement would be different were the populations of the colonial possessions taken into account. Thus the total population of Great Britain—including that of Asia, Africa and America, and the people of her islands the world over—is 381,038,000. This would give a per capita rate of only \$0.23. France's population would be increased to something over 59,600,000, and her rate per capita would be decreased to \$0.87. Italy's colonies would swell the total of her population to nearly 35,000,000, reducing the per capita to \$0.51. Spain's population, counting the entire kingdom, would be over 28,900,000, hence her naval assessment for each person would be \$0.15. But it is understood that the mother countries, unassisted, maintain the national forces.

Corrosion in Steel Ships.

English shipping journals are discussing more than ever, just now, the question of deterioration which is taking place in ships built of steel. Managers of vessels are becoming so alarmed that they are now specifying a large portion of the work to be of iron, such as the upper decks, floors, tank-tops, etc. Some of the manufacturers of steel have been making experiments to determine whether it is really the case that steel corrodes more quickly than iron. In one case experiments were carried out by means of plates of various thicknesses being exposed in both fresh and salt water for periods from one month up to a couple of years, with the result that the steel plates exposed for a period up to six months corroded much faster than the iron ones, but after that the advantage lay with the steel, those exposed for two years being in a much better condition than the iron ones. It is claimed also that ships built of steel within the last few years do not show the same inclination to corrode, from the fact that the manufacture of steel is better understood. None of the associations of naval architects have given this subject serious attention, although it would seem that there is room for careful research regarding it.

One of the leading English manufacturers of water tube boilers said at the recent meeting of naval architects in France that it was a matter of only a little time now when merchant ship owners would find it very much to their advantage to adopt these boilers. "Great attention is being given," he said "to making them automatic; indeed, this is the really difficult problem now, and when it has been solved the water tube boiler will displace the present form, even in the mercantile marine. At present too much strain is thrown on the boiler attendants, as, should the feed be wanting for a few minutes, a disaster might occur. Great care has to be taken with the feed pumps, and the strain on the feed pipes often exceeds 500 pounds per square inch. Just now the combination installments—that is water tube boilers in one compartment and cylindrical boilers in another—are to be commended, as this arrangement gives the maximum of security and efficiency at the present stage of development."

Through the efforts of Cleveland city officials and commercial bodies, the Ohio state legislature has passed a bill authorizing the city to issue bonds to the amount of \$500,000 for widening, deepening and straightening the Cuyahoga river. Big appropriations of this kind for river and harbor purposes, additional to funds furnished by the general government, will certainly result in a more active competition for business between lake cities, especially on Lake Erie, and these cities may yet be found spending on their own account for harbor improvements more money than is apportioned to them in river and harbor bills by the government.

James Christie and Geo. Abrams will again have charge of Westcott's marine reporting agency, Detroit, during the present season.



DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

Published every Thursday at No. 409 Perry-Payne building, Cleveland, O., by John M. Mulrooney and F. M. Barton.

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The books of the United States treasury department on June 30, 1895, contained the names of 3,342 vessels, of 1,241,459.14 gross tons register in the lake trade. The number of steam vessels of 1,000 gross tons, and over that amount, on the lakes on June 30, 1894, was 359 and their aggregate gross tonnage 634,467.84; the number of vessels of this class owned in all other parts of the country on the same date was 316 and their tonnage 642,642.50, so that half of the best steamships in all the United States are owned on the lakes. The classification of the entire lake fleet on June 30, 1895, was as follows:

Class.	Number.	Gross Tonnage.
Steam vessels.....	1,755	857,735.00
Sailing vessels.....	1,100	300,642.00
Unrigged.....	487	83,082.00
Total.....	3,342	1,241,459.00

The gross registered tonnage of vessels built on the lakes during the past five years, according to the reports of the United States commissioner of navigation, is as follows:

Year ending June 30,	Number.	Net Tonnage.
1891.....	204	111,856.45
" " " 1892.....	169	45,168.98
" " " 1893.....	175	99,271.24
" " " 1894.....	106	41,984.61
" " " 1895.....	93	36,353.00
Total.....	747	334,634.28

ST. MARY'S FALLS AND SUEZ CANAL TRAFFIC.

(From Official Reports of Canal Officers.)

	St. Mary's Falls Canal.			Suez Canal.		
	1895.*	1894.	1893.	1895.	1894.	1893.
No. vessel pass'ges	17,956	14,491	12,008	3,434	3,352	3,341
T'n'ge, net registd	16,806,781	13,110,366	9,849,754	8,448,383	8,039,175	7,659,068
Days of Navigat'n	231	234	219	365	365	365

* 1895 figures include traffic of Canadian canal at Sault Ste. Marie, which was about 1/4 per cent. of the whole, but largely in American vessels.

THE REVIEW has printed several articles in recent issues supporting senate bill 735 and H. R. 3,618, which provide for a reorganization of the engineer corps of the navy. One feature of this measure (the bills are duplicates) which is of special merit is that relating to the opening of the engineer corps to graduates of technological schools, and the strengthening of such schools by detailing engineer officers as professors of marine engineering, and by furnishing models, etc. This provision of the measure was the main cause of support being given to it by the REVIEW. Vessel owners and others interested in merchant shipping are not greatly concerned in the struggle that is constantly kept up between the line officers and the engineers of the navy, but it is unfortunate that this fight should prevent the passage of legislation that would help to develop schools of marine engineering and thereby assist in the advancement of ship building and shipping in general throughout the country. But it would seem that the bills referred to are not to pass the present congress, and the failure may be attributed largely to the struggle for supremacy between the different branches of the navy. Congressman Boutelle, chairman of the naval committee of the house, is opposed to the passage of the measure, and his influence will very probably be sufficient to kill it. Some extracts from an interview with Mr. Boutelle will serve to show the bitterness of feeling between line officers and the engineers of the navy. "A few years ago," says Mr. Boutelle, "during the administration of Secretary Whitney, I stood in the breach for the engineers when they had a fair chance of being side-tracked entirely and when it was intended to change the bureau of steam engineering into a division. Now they are demanding everything, and apparently want to run the entire navy. I am sick and disgusted of this entire fight among the officers of the United States navy. It has gone too far, and the time has come to call a halt on them. The whole difficulty is that there are too many idle naval men allowed to hang around Washington. They ought to be bundled up, bag and baggage, and sent to sea. These young naval men, after having been educated at the expense of the government, aim too high through being thrown in with the sons of millionaires whom they meet in social functions at Washington and elsewhere. I do

not see why the engineer should want to be called an admiral. It does not make him any better, and it does not in any way improve his social condition among people whose opinions are worth anything. It is simply a fight for power and control between the different branches of the service. It is an ugly and bitter contest, and is hurting the American navy and demoralizing its officers. It is destroying the esprit de corps that formerly existed in the service, and unless it is brought to a speedy stop, it will seriously effect the efficiency of our navy. There ought, of course, to be some sort of a compromise measure devised that would be fair to all parties, but the fight between the different corps of the service is now so bitter that there does not seem to be any chance for a compromise going through."

IN EVERY congress a measure of some kind or other seeking to prevent the employment of aliens in any capacity on lake vessels is introduced by some member who is looking for favor from labor organizations. Officers of all vessels of the United States, both on deck and in the engine department, should, for various reasons, be citizens of the country. They must be depended upon in event of difficulty of any kind with other countries. But there is no more reason for demanding that a sailor or deck hand on a lake vessel be a citizen, than there would be in requiring manufacturing establishments in lake cities to hire only citizens. And yet vessel owners are compelled every year to oppose bills with this end in view. Not only are these bills made to require citizenship, but they even provide imprisonment for the vessel owner who could not prove that every man hired by the officers of his vessels is a citizen of the United States. The absurdity of such measures would be beyond attention if it were not for the fact that unless bills of this kind are watched in Washington some of them are liable to be passed. This agitation is, of course, due to the great number of Canadians who apply for work aboard vessels in American ports on the lakes. The latest measure of this kind was introduced by Representative Mahaney, of Buffalo, and is now before the house committee on immigration. It provides a fine of \$300 to \$500, or imprisonment for six months to a year, for permitting an alien to work upon a lake vessel. This bill will probably be killed in committee, but there is little doubt of others of the same kind following it, so that constant vigilance is required on the part of vessel owners.

THERE is little question of some changes being required in the St. Mary's river regulations as soon as a trial of the rules is made on big fleets bound up and down the river when Lake Superior commerce is at its height. Already there is complaint from masters who claim that the rules are too stringent and can never be enforced in their present form. This complaint is heard even from captains who are members of the Cleveland lodge, Ship Masters' Association. But it is hardly in order for these captains to complain now. Their organization sent a committee to Washington to help prepare these rules with officials of the treasury department, and the committee's suggestions were accepted in every particular. It is now the duty of all shipmasters to abide by the rules for the present, and make such suggestions to the revenue cutter officials as will result in changes tending to make them satisfactory to all concerned.

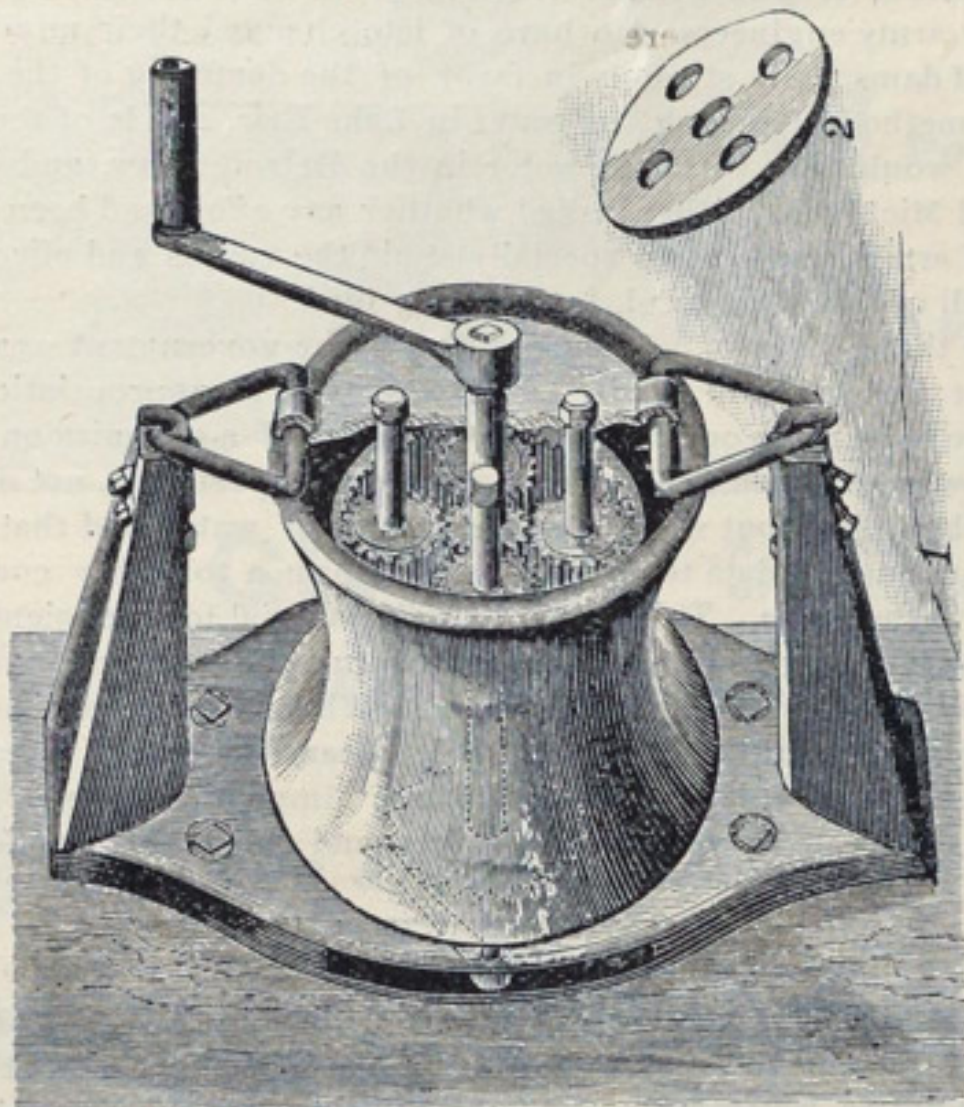
IT is now expected that the senate committee on commerce will report the river and harbor bill to the senate before the close of the present week, and there will be no delay in passing the measure, as the additions made since the bill left the house are understood to be very moderate. No changes of importance have been made in appropriations granted by the house to works on the lakes. Vessel owners are now interested in only one other bill before congress, and that is the sundry civil appropriation bill. Appropriations for lights, fog signals, etc., carried by this bill as it passed the house, were noted in the REVIEW of last week. It is expected, however, that in the senate next week Mr. McMillan will secure amendments to this bill providing for the construction of a revenue cutter to replace the Fessenden on Lakes Erie and Huron, as well as \$20,000 for a light and fog signal on Middle island, Lake Huron, and \$20,000 for gas buoys to mark channels in various parts of the lakes.

ALTHOUGH it is said that the recall of Col. Wm. Ludlow from London, where he has been performing the duties of army attache to the United States embassy, means his appointment to the position made vacant by the death of Gen. Poe, there is, of course, nothing certain about the stories that are being told in this regard. It is said also that he will be given charge of the third light-house district, which is a very important district, embracing aids to navigation on the coasts of Rhode Island, Connecticut, New York, and a part of New Jersey. But there are several important charges to be made among officers of high rank in the army engineer corps, and there is no telling where Col. Ludlow will be stationed until the official assignment is announced.

It's the same old story. Just as soon as the weather permitted of a fellow taking off his overcoat every vessel owner on the chain of lakes made a rush to move his ships.

An Improved Winch.

A winch that is said to be especially designed for use on shipboard in hauling braces, halyards, etc., as it may be attached to the railing, bulwark, or mast, or other convenient support, is illustrated herewith. It is the invention of Henry Ekrem of San Pedro, Cal., and is said by naval officers, who have examined it, to contain features of special advantages. In the back plate is a central interior chamber, and on its front face are top and bottom horizontal arms in whose outer ends are bolt cavities, the outer ends of the bolts being bent to form hook arms.



The drum or burrel is toothed centrally on its inner surface, and around the central shaft, journaled in the back plate, are four stationary shafts, screwed or otherwise firmly secured at their rear ends in the back plate. On these shafts are collars at the rear side of the teeth on the central inner surface of the drum, and on the collars rests a rear guide plate having openings to receive all the shafts, as shown in Fig. 2, there being a similar front guide plate, and adjustable sleeves being fitted to all the shafts to engage the outer face of the forward guide plate. The central shaft has a pinion adapted to engage pinions loosely mounted on the stationary shafts, the latter pinions engaging the teeth on the inner face of the drum, to impart a rotary motion thereto. The guide plates, with the collars and sleeves, prevent end movement of the shafts, and the front plate is held in position by top and bottom yokes or links, the plate being readily removable by turning the hook ends of the bolts. The central shaft is prevented from unwinding by a ratchet wheel engaged by a gravity pawl in the chamber in the back plate, as indicated by the dotted lines. The winch may be readily taken apart and put together again without difficulty. The engraving is from the Scientific American.

Lynn's marine reporting agency at Port Huron has been awarded the contract for furnishing news during the coming season to the Lake Marine News Association, the organization which collects and distributes all marine news for daily papers and for the service which the MARINE REVIEW renders in Cleveland to vessel owners. Masters will therefore serve their owners and all other interests if they will give to Lynn's reporters on the river any information that they may have. Two long, two short and one long whistle will call a reporter. Lynn has secured from Capt. Geo. Simpson a megaphone (speaking trumpet) and it will be used in communicating with passing vessels.

An idea of the great consumption of fuel attending the trials of the 30-knot torpedo boat chasers that are being built in England and France may be gained from official accounts of these trials. While maintaining a speed of 30.029 knots on an hour's run, the Forban, fastest of the French torpedo boats burned 5,940 pounds of coal. The same vessel, during a run of eight hours' duration, at 14 knots speed, consumed only 423 pounds of coal. Three runs were made with this vessel on the measured mile in order to determine the relation between the speed of the ship and the revolutions of the screw, so as to accurately deduce the speed from the total number of revolutions on an hour's run. This latter run was, of course, at full power, and the speed maintained was, as noted, an average of 31.029 knots. The Forban is 144 feet 4 inches between perpendiculars, 14 feet 6 inches maximum breadth on load line, 15 feet 2 inches extreme breadth and 10 feet depth. Her displacement on trial was 125 tons; fully laden it is 136 tons. The machinery consists of two triple expansion engines driving twin screws, and steam is supplied from two Normand water tube boilers.

"Ye Lake Engineer on Watch."

Everybody knows of the dislike that engineers on the lakes entertain for steamers that have engines placed deep in the after hold. The Marine Engineers' Beneficial Association of Cleveland, No. 2, has just issued a book which contains names of officers, a directory of members, etc. A few pages of selected reading matter are also included in the book, and on one of these pages it is noted that Zachary Boyd, an eminent Scottish divine, was born before 1590. Then as a specimen of his homely style, the following extract from Jonah's soliloquy within the whale's belly is quoted and called "Ye Lake Engineer on Watch:"

What house is this where's neither coal nor candle,
Where I nothing but guts of fishes handle?
I and my table are both here within,
Where day neere dawned, where sunne did never shine;
The like of this on earth man never saw,
A living man within a monster's maw,
Buried under mountains which are high and steep,
Plunged under waters hundreth fathoms deep,
Not so was Noah in his house of tree,
For through a window he the light did see;
He sailed above the highest waves—a wonder;
I and my boat are all the waters under;
Hee in his arke might goe and also come,
But I sit still in such a straightened roome
As is most uncouth, head and feet together,
Among such grease as would a thousand smother.
I find no way now for my shrinking hence,
But heere to lie, and die for mine offense.
Eight prisoners were in Noah's bulk together;
Comfortable they were, each one to other.
In all the earth like unto me is none,
Far from all living, I heere lye alone.

Trade Notes.

A metal polish that will clean any kind of metal, hot or cold, in half the time usually required, would be a boon to the engineer force of lake steamers. These qualities are claimed for the Royal metal polish, prepared by the Columbia Mfg. Co., No. 94 Holmden avenue, Cleveland, and sold by John Thomson, River street, Cleveland. Engineers' supply stores will find the manufacturers ready to make favorable terms to agencies.

The Buffalo Forge Co., Buffalo, N. Y., is building the special blowers with compound engines required for torpedo boats Nos. 3, 4 and 5, and also the Holland torpedo boat. The Columbia Iron Works, as is generally known, is building these vessels for the United States government. The Buffalo company is also building blowers and engines for revenue cutter No. 2, which is under construction at the Atlantic Iron Works, Boston, Mass.

H. C. Doman, proprietor of the Union Iron Works, Oshkosh, Wis., writes as follows to Alex C. Bates, agent for the Empire boiler treatment: "After using your compound one month, I opened the boiler and cleaned out the dirt; then I let it go for one month longer and again cleaned it out, removing scales 3 to 4 feet long and about three-eighths of an inch thick. The boiler is now just as clean as it was when made. I am highly pleased with your compound and shall recommend it to any one having use for it."

The Roberts Safety Water Tube Boiler Co., 39 and 41 Cortlandt street, New York, frequently has application from vessel owners for marine engineers. Engineers who have had experience with Roberts boilers will do well to send that company their names, addresses and references, together with a statement of what vessels they have had charge of and the tonnage of their certificate. All this information will be entered in a book and kept for the purpose, and a full page devoted to each applicant so that changes of address can be noted, etc.

Beck's patent steam steering gear, manufactured in Milwaukee, seems to be meeting with special favor among lake vessel owners as its merits become known. Within the past thirty days gears of this type have been shipped to M. A. Bradley of Cleveland, to the Hausler & Lutz Towing Co. of South Chicago for their new tug, to the steamer Sachem in Chicago and to Wm. H. Hill of Erie. Up to this time these gears have been designed with special attention to placing them in the pilot house, but the manufacturers are now at work on drawings of a larger gear, which will be placed below deck and will be ready for sale in the fall. Pawling & Harnischfeger, 156 to 168 Clinton street, Milwaukee, are the manufacturers. It is claimed that these gears can be instantly changed from steam to hand without taking hands off the wheel. The controlling rig runs in oil and is entirely free from wear and play, and it is said to be always in its right position, no matter when or where the gear is changed from steam to hand or back again. The gear may be turned indefinitely in one direction or the other, as long as steam is able to turn the engines, and when steering by hand the controller is cut out entirely and is completely out of use.

Around the Lakes.

Capt. J. Hursley of Sault Ste. Marie has chartered a tug which will take a wrecking outfit in a few days to the schooners Moonlight and Kent, ashore on Chocoday beach, near Marquette.

Two Pintsch gas buoys for Pelee passage, Lake Erie, to mark the middle ground and the shoals south and east of Pelee point, have been ordered from England, and it is expected they will be in position a couple of weeks hence.

At the Franklin mine, Mesabi range, there is said to be 180,000 tons of iron in stock, while the Canton mine on the same range has 150,000 tons. These stock piles indicate the preparations that have been made for a heavy ore movement.

The tug Monarch with a wrecking expedition from Escanaba under the direction of Capt. Cyrus Sinclair, representing C. A. Macdonald & Co. of Chicago, is endeavoring to release the steamer Jim Sheriffs, stranded on Big Summer island.

Owing to the late date on which an effort was made to organize a branch of the American Association of Masters and Pilots of steam vessels in Detroit, the matter will be postponed until the return of masters and pilots from their vessels in the fall.

Cassier's Magazine for May contains an article on "Power Distribution in the Cylinders of Compound and Triple Expansion Engines" by Wm. Henderson, and another on "American Naval Engineers, their Rank and Title" by Ledyard Catheart.

During the present season the tugs S. C. Schenck, Roy, L. Birckhead, A. Andrews, Jr., Fanny L. Baker, Frank S. Butler, T. M. Moore, Uncle Sam, Jos. S. Spinney and Wm. E. Rooney, will all be in the Toledo Harbor Tug Line, of which L. S. Sullivan is manager.

The new Wilson line steamer W. D. Rees, just completed by the Cleveland Ship Building Co., took 3,710 net tons of coal on her first cargo to Lake Superior. The steamers' draft was 12 feet 10 inches forward and 13 feet 5 inches aft. In addition to this cargo the big steamer loaded 200 tons of fuel. Another steamer built by the Cleveland company, the Chili, has just taken a cargo of 3,500 tons of package freight from South Chicago to Buffalo.

The Cleveland Rolling Mill Co's boats, managed by Capt. W. C. Richardson of Cleveland, were the first of the ore fleet to move last week. The J. H. Wade was the first freight steamer to pass the Straits bound up, and the J. H. Devereaux was the first freight steamer to reach the Sault, bound for Lake Superior. Vessels of this fleet have been generally overhauled during the winter. The Wm. Chisholm was given a new Scotch boiler, 13½ by 14 feet, as well as new fuel hatches and part new iron deck. The most important change in the Devereaux is the substitution of three pole spars for the masts which she carried. The Devereaux was also given part new iron deck.

Members of the committee of the Lake Carriers' Association, appointed some time ago to look after the matter of ore trimming charges at upper-lake shipping ports, have agreed that the rate at Duluth, Superior and Ashland, where ore is largely of the soft kind, shall be 2½ cents a ton, and at Marquette and Escanaba 3 cents a ton. It is to be expected, of course, that in some cases the trimmers will demand higher rates than those noted, but members of the committee say they will endeavor to have all owners instruct their captains to trim with their crews or leave port without trimming, rather than pay higher rates.

An unusual number of deaths is reported among lake vessel masters. The death of Capt. Wm. Cowin of Cleveland is referred to elsewhere in this issue, and from Buffalo announcements have been made within a few days regarding the death of two of the best known masters of line boats. Capt. James Niland, whose last steamer was the Anchor liner Alaska, died at his home in Cape Vincent, N. Y. on Friday last. He was a brother of Capt. Martin Niland of the steamer Northern Wave. Capt. W. P. Garden, who died at his home near Oswego, N. Y., had been in the employ of the Union Steamboat Co. since 1889. His last command was the steamer Tioga. Mate John Wulke will succeed Capt. Garden in command of the Tioga.

District Judge Swan of the United States court, Detroit, decided two admiralty cases Tuesday. He dismissed the libel brought by E. M. Carlton and others against W. S. Jenks of the Phoenix Iron Works, Port Huron. The libelants claimed that the boiler company had insecurely fastened a boiler in one of the steamers, and that an explosion had resulted, for which they claim nearly \$30,000 damages. The court held that the claim of the boiler being insecurely fastened had not been established. The other case was that of the Wallace & Cunningham Transportation Company against the steamer H. E. Runnels. In the summer of 1894 the Runnels caught fire in Lake Erie off Ashtabula. Wallace & Cunningham's steamer New Orleans and another boat went to her rescue and towed her into port at Ashtabula. The court awarded salvage in the sum of \$2,450, of which \$50 is to be paid to the mate of the New Orleans.

Opinions From Col. Lydecker on the Water Question.

Col. Lydecker of the United States engineer corps, stationed at Detroit, has been interviewed on the water question. As might be expected, he takes the position of the late Gen. Poe that the deepening of the channels has but little if any effect on the lake levels. The water may run off a little more smoothly than it did before, he says, but not in sufficient quantity to materially lower the lakes. Lack of precipitation, hot summers that cause great evaporation and the clearing away of the forests in the lake watersheds all contribute to the lowering of the water, but it is folly, he thinks, to attribute the decrease to any one of these alone. But with other army engineers who have of late changed their minds on the question of dams, he is strongly in favor of the damming of the Niagara river as a method of raising the water in Lake Erie, and is of the opinion that dams would also raise the water in the Detroit river, and in Lakes Huron and Michigan. When asked whether any effort had been made on the part of army engineers to specially study the causes and effects of the rise and fall of lake levels, Col. Lydecker replied:

"None that I know of. I suppose that if the government were to take the matter up it would begin by setting aside an appropriation, and it would have to be a big one, to pay the expenses of a commission of army engineers who might in five years of study and experiment, not only with the lakes themselves but with an immense area of watershed that supplies them, secure enough data to enable them to form a tolerably correct conclusion as to the cause. This would be rich material for the scientists, but I do not see how it would better aid the government in devising means to stop the fall of water levels; still it might. What is of more consequence is the experimentation to find a suitable means to check the fall now without going to all this expense and time. Immediate effects must be had, and they can be obtained in other and more practicable ways, I think."

In General.

Appropriations in the river and harbor bill for South Chicago are said to be sufficient to provide 20 feet of water in the Calumet river for about two miles up from its mouth. This means that the ship yard, elevators and Illinois steel company will all have 20 feet of water at their docks. Some big cargo records in ore from Escanaba to South Chicago may be looked for when the dredging provided for in these appropriations is completed in October next.

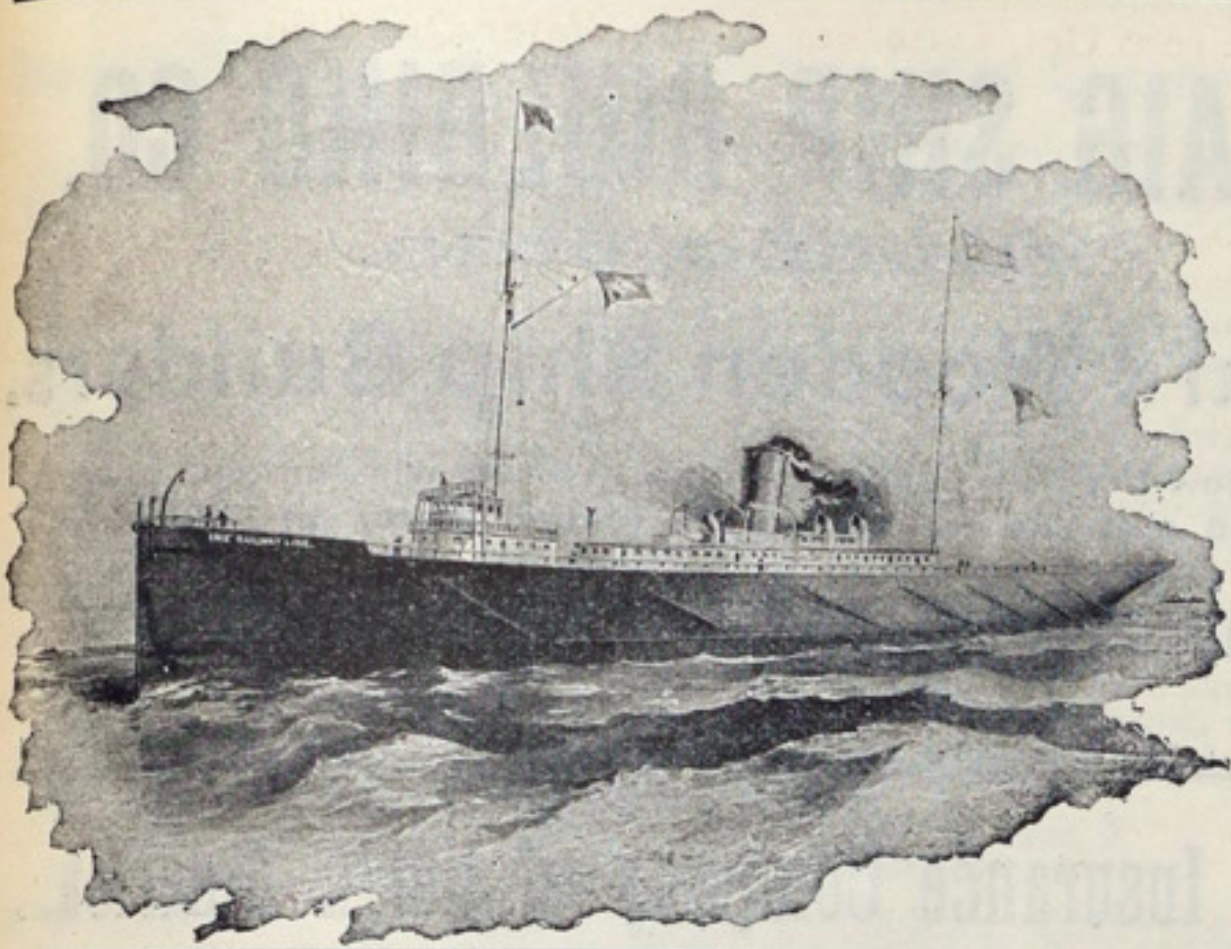
Consular reports for April, Vol. L, No. 187, contains an extended letter from J. B. Taney, counsel at Belfast, Ireland, giving a complete account of the late ship builders' strike on the Clyde and in England and Ireland. The letter deals with the management of the men by their leaders in London and is very interesting. A copy of this number of the consular reports can be obtained through any congressman or senator.

It is admitted on all hands now that the Detroit river bridge bill, as regards action in the present congress, is dead. The entire shipping interests on the lakes certainly have to thank Mr. Harvey D. Goulder, counsel of the Lake Carriers' Association, for the defeat of this bill. When he last visited Washington to oppose the bill, some of the most earnest supporters of the vessel interests had given up all hope of defeating the measure in the senate. Now it is not probable that the bill will even come up for hearing in the senate.

The latest bulletin regarding aids to navigation published by the hydrographic office notes the removal of a shoal recently found at the entrance to Chicago river. A notice from Dr. Wells Church of Drummond, Mich., directs attention to a shoal with but 3 feet of water over it on the east side to the south entrance to Detour passage. The shoal consists of large boulders and is approximately 3,500 feet S. W. ½ W. from Barbed point (Crab island). It is also reported that the shoal shown on the charts 2,600 feet south from Barbed point lies about 3,200 feet S. E. ¼ S. from that point.

The annual meeting of the stockholders of the Joseph Dixon Crucible Company was held at the Company's main office, Jersey City, N. J., Monday, April 20, and out of a possible vote of 7345 shares, there were 7320 shares voted for the re-election of the old board, consisting of Edward F. C. Young, John A. Walker, Daniel T. Hoag, Richard Butler, William Murray, Alexander T. McGill, and Jerome D. Gillet. President E. F. C. Young, Vice-President and Treasurer John A. Walker, and Secretary Geo. E. Long were re-elected by the directors. Judge Joseph D. Bedle was also re-elected as counsel.

Geo. H. Morrill & Co. of Boston, Mass., manufacturers of printers' inks, are erecting a building over some new stills in addition to their already extensive plant. This building will be of steel construction throughout, having steel siding, roof trusses, and covering, and the interior platform will be constructed in the same manner. The Berlin Iron Bridge Co. of East Berlin, Conn., has the contract for furnishing the complete building.



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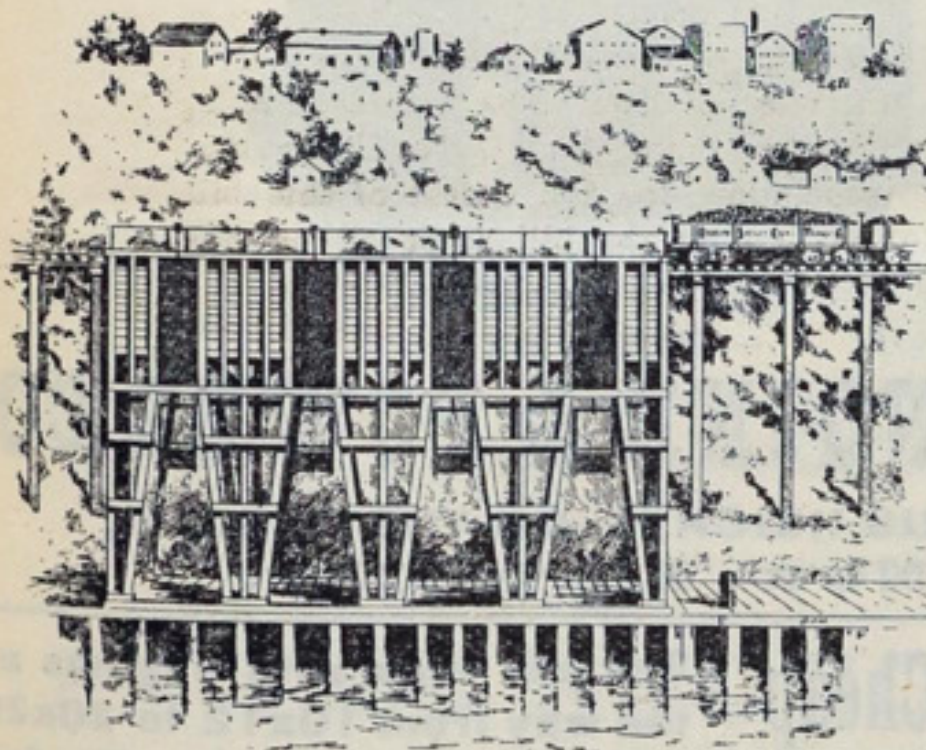
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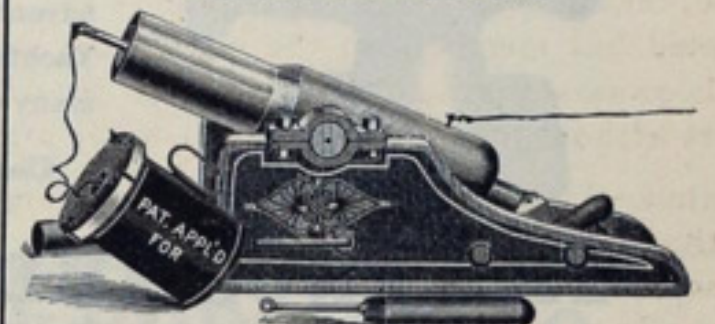
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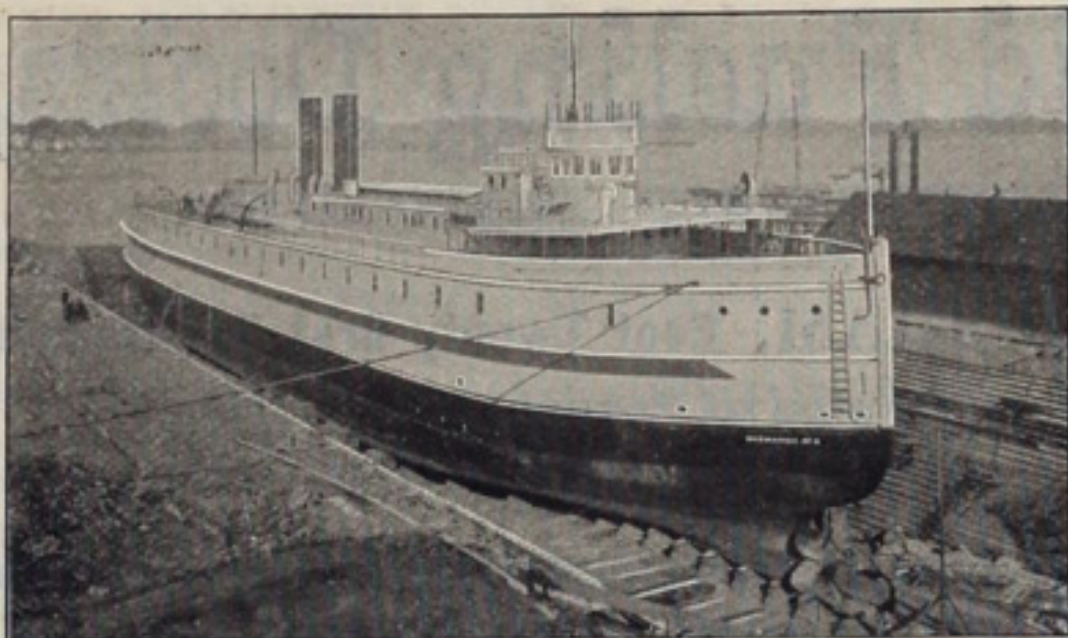
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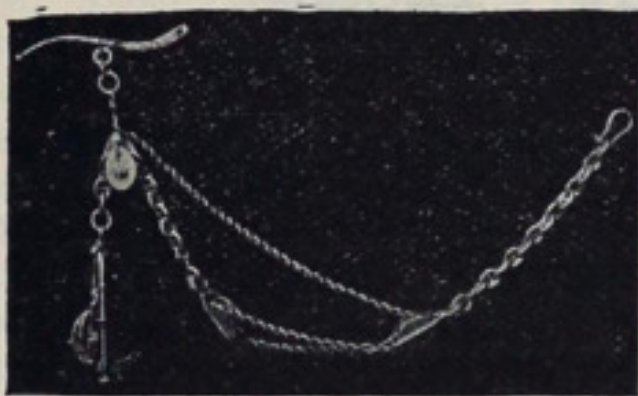
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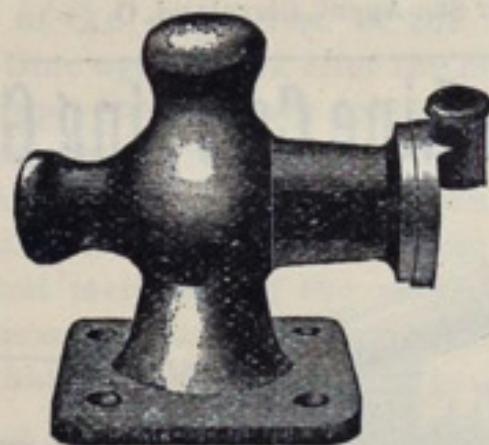
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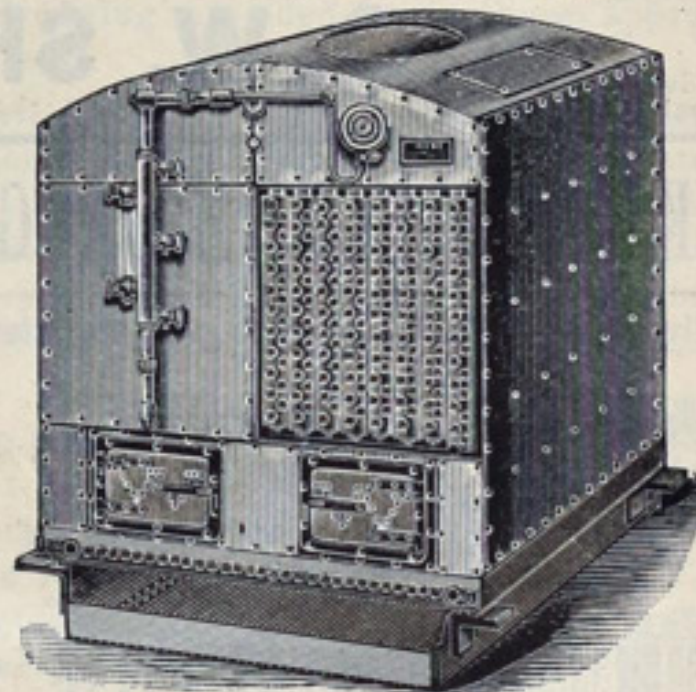
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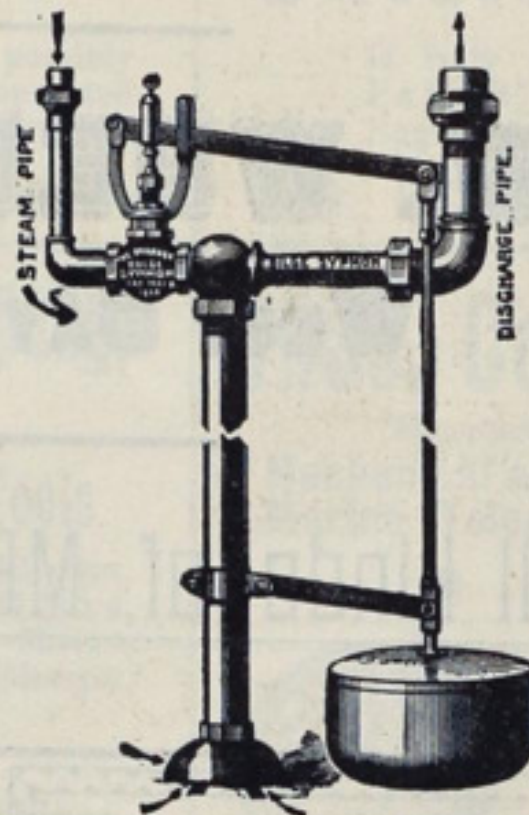


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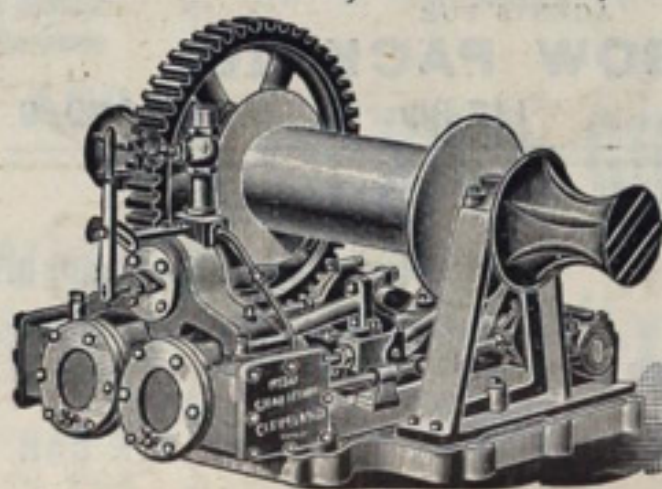
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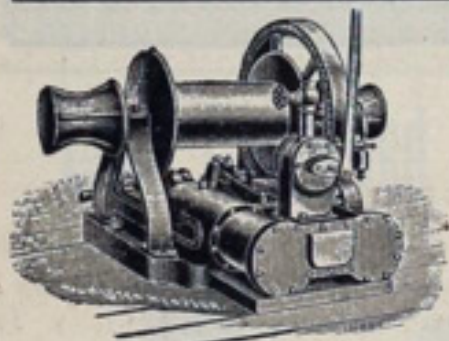
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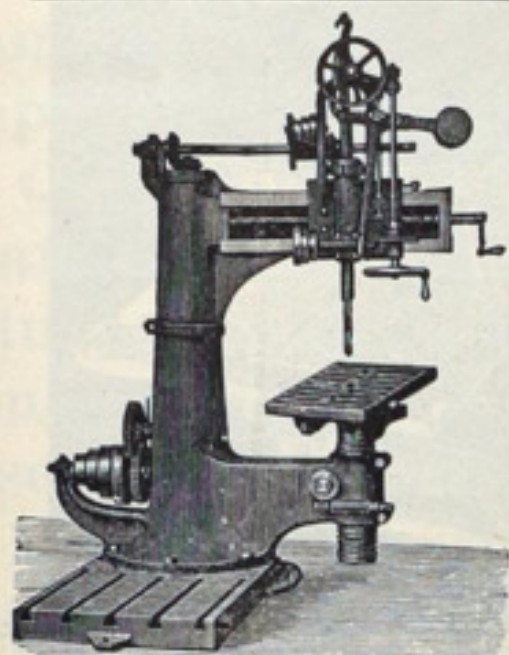
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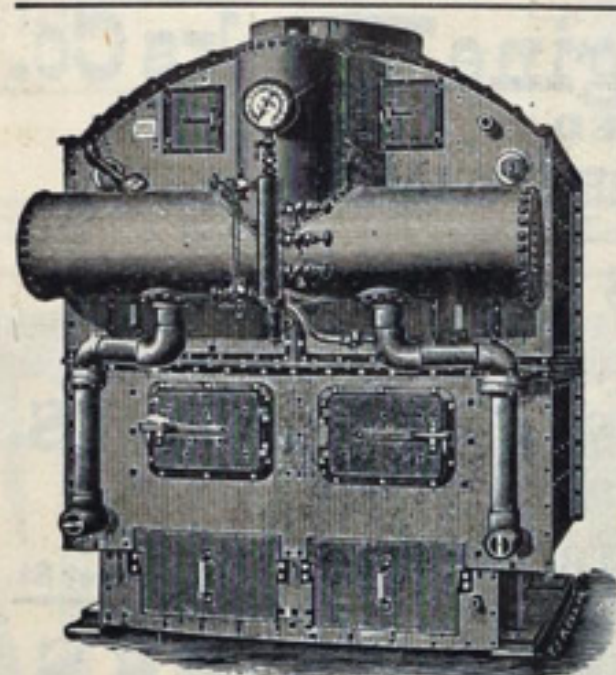
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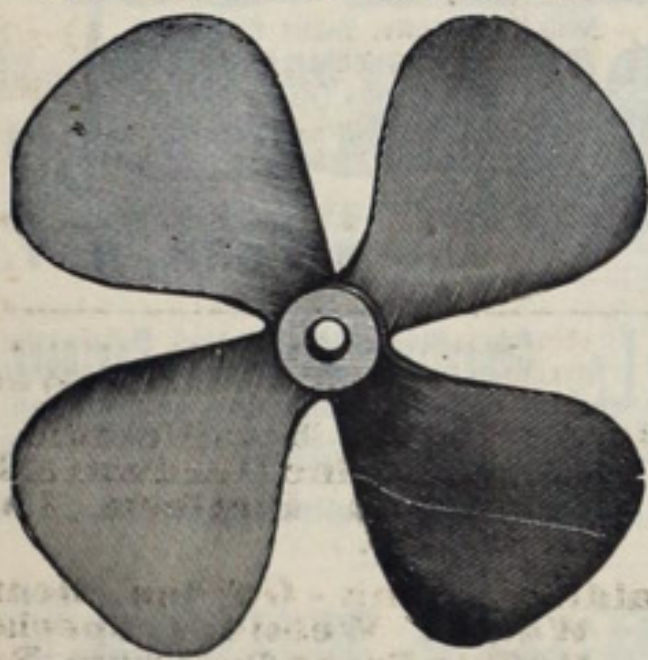
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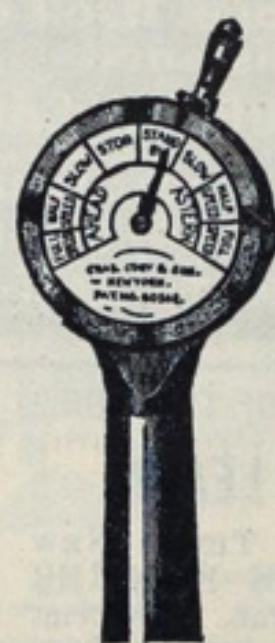
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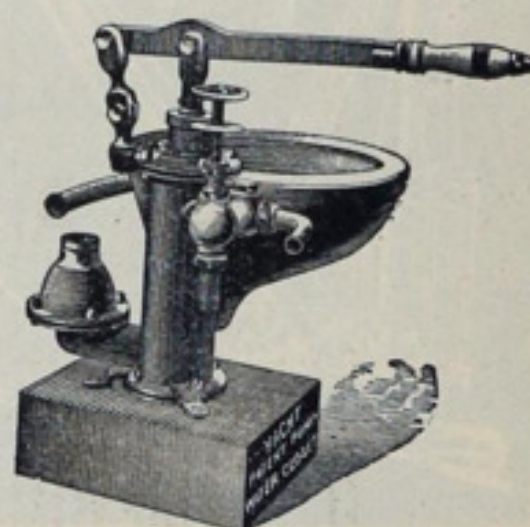
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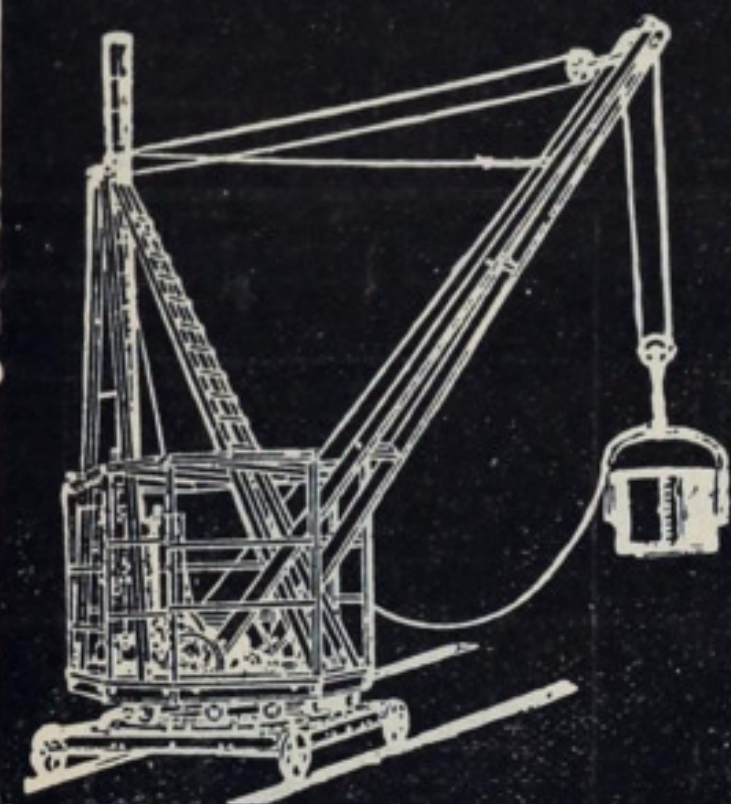
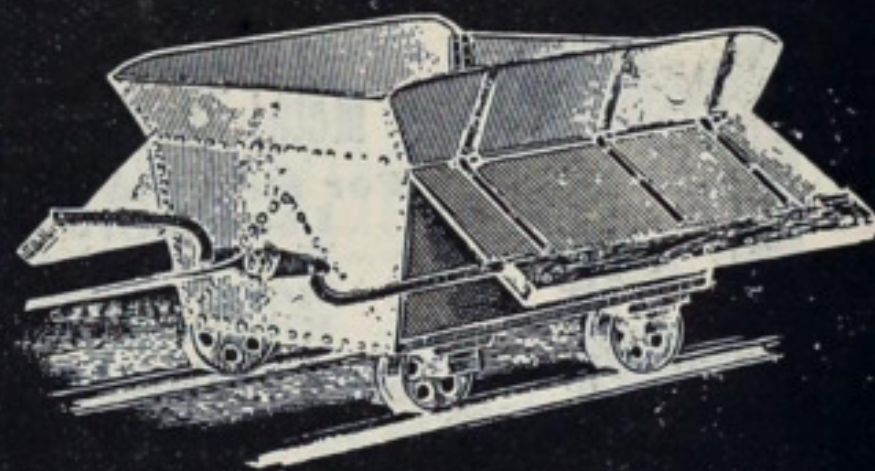
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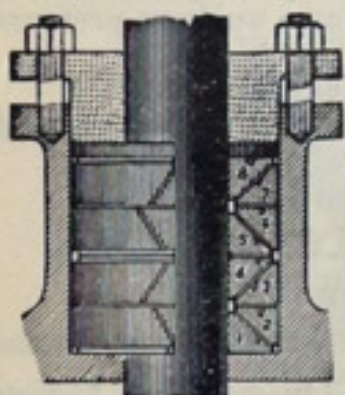
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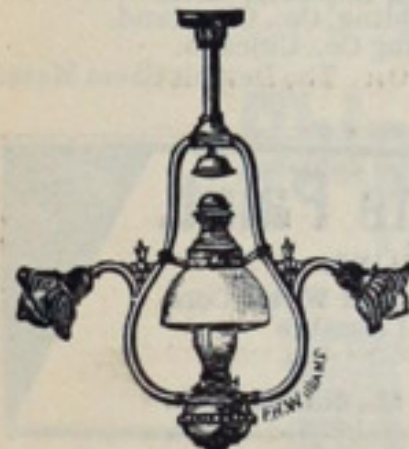
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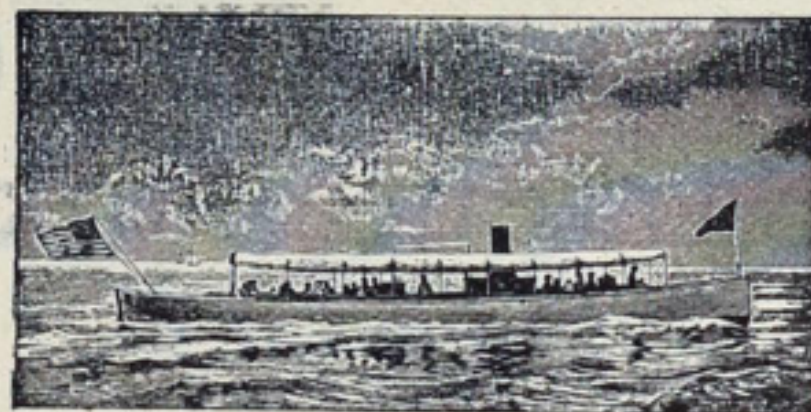
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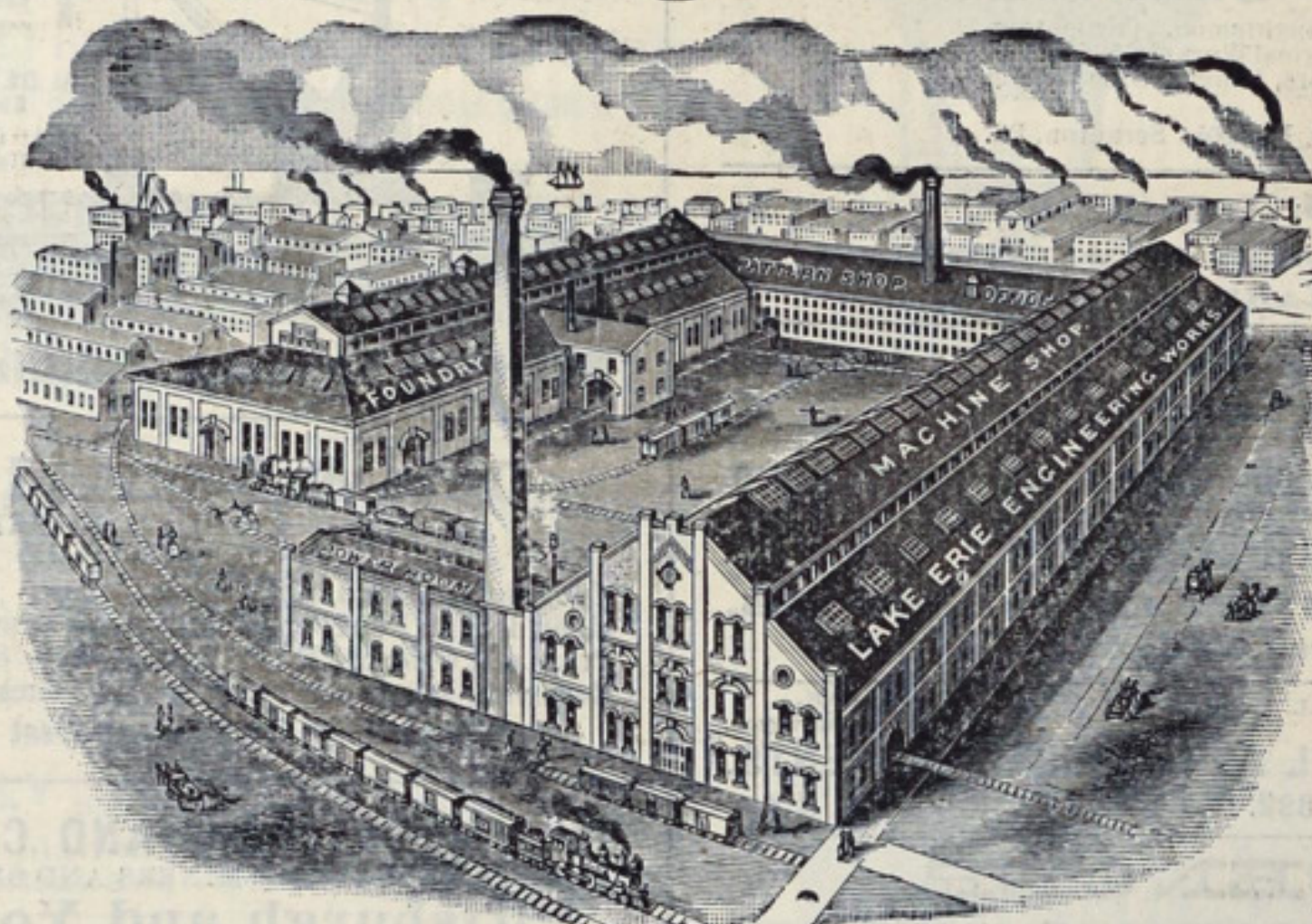
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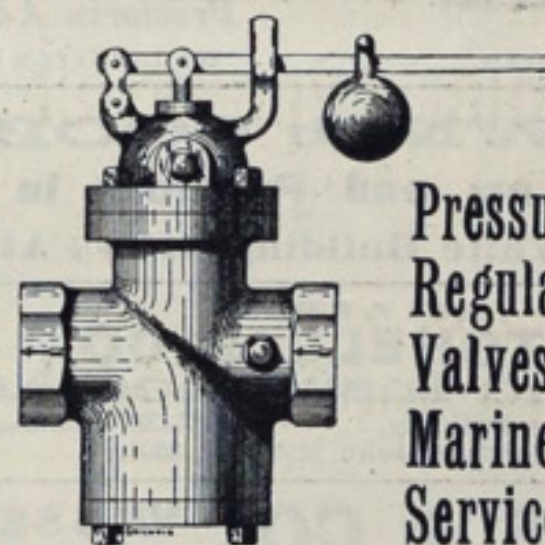
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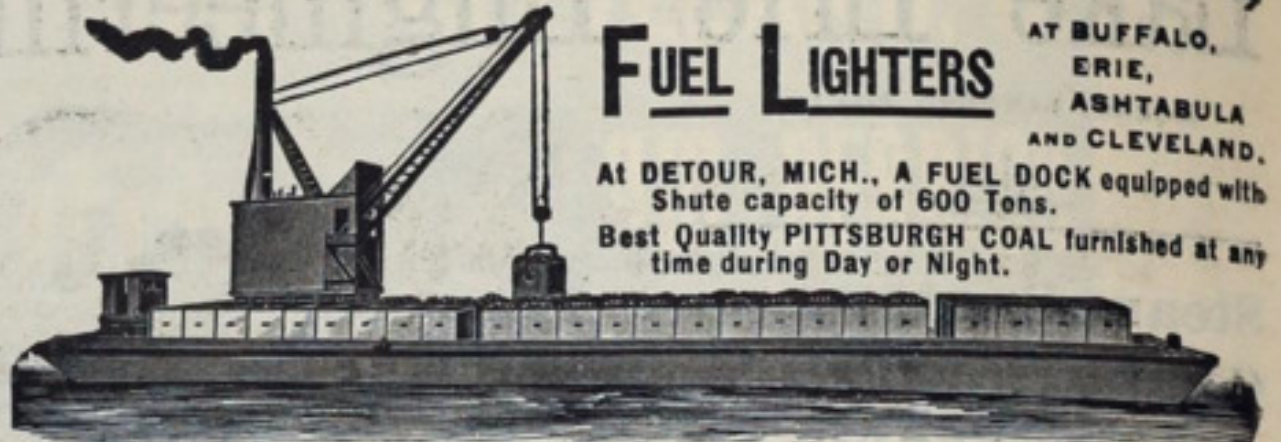
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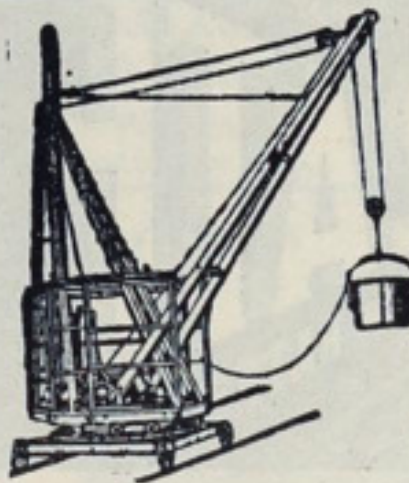
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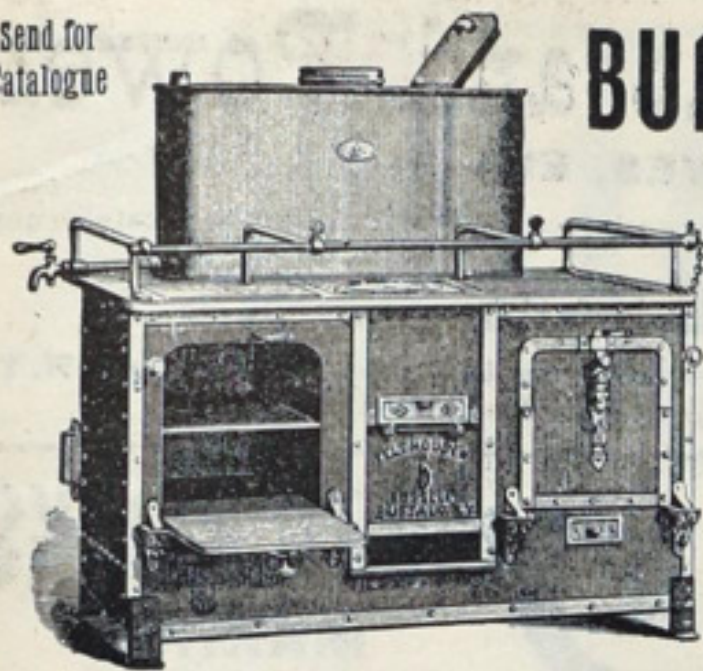
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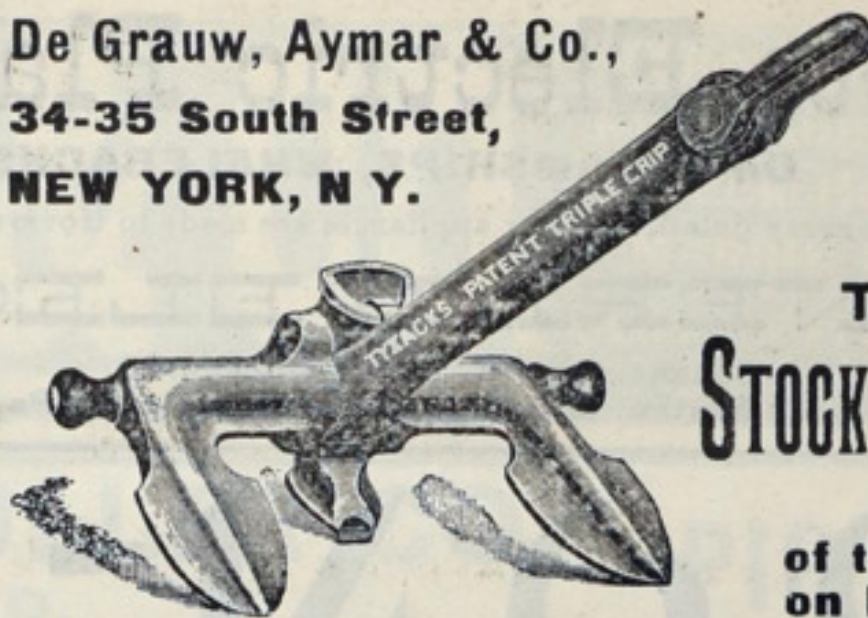
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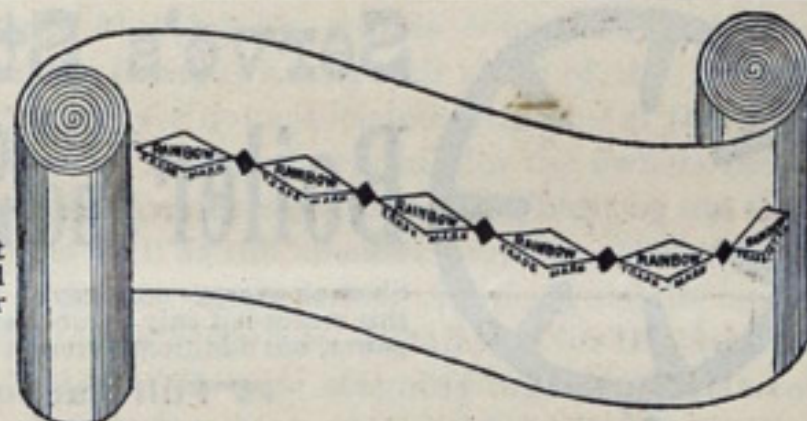
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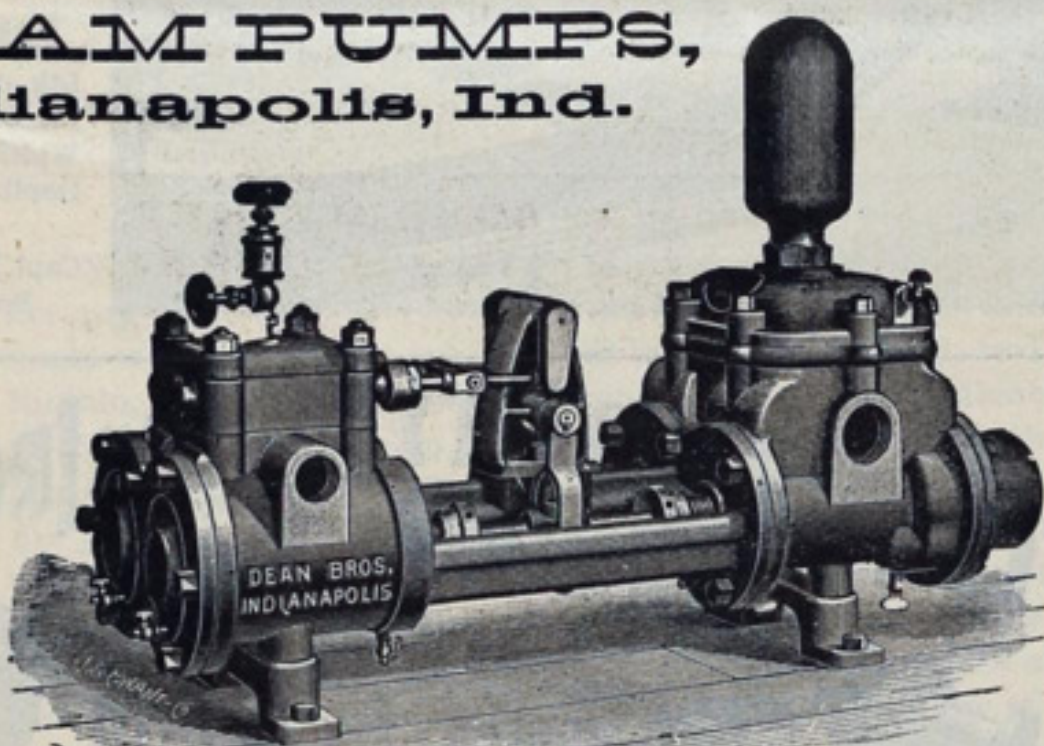
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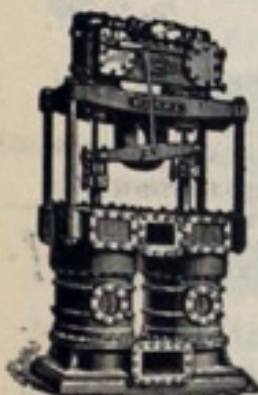
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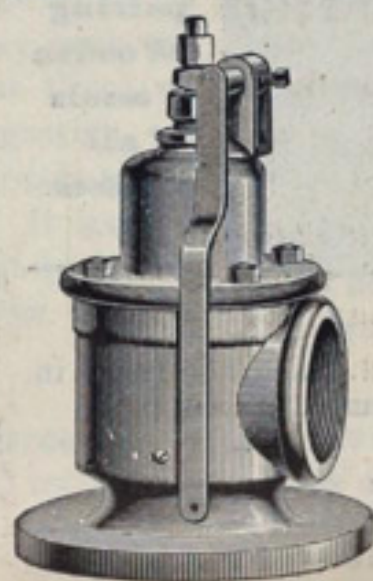
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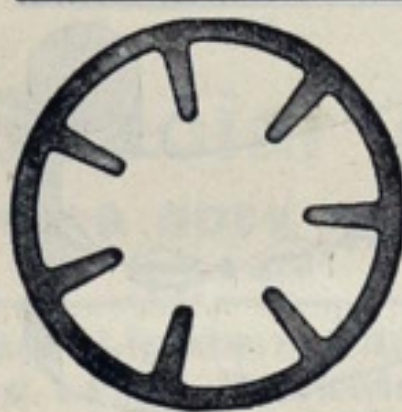
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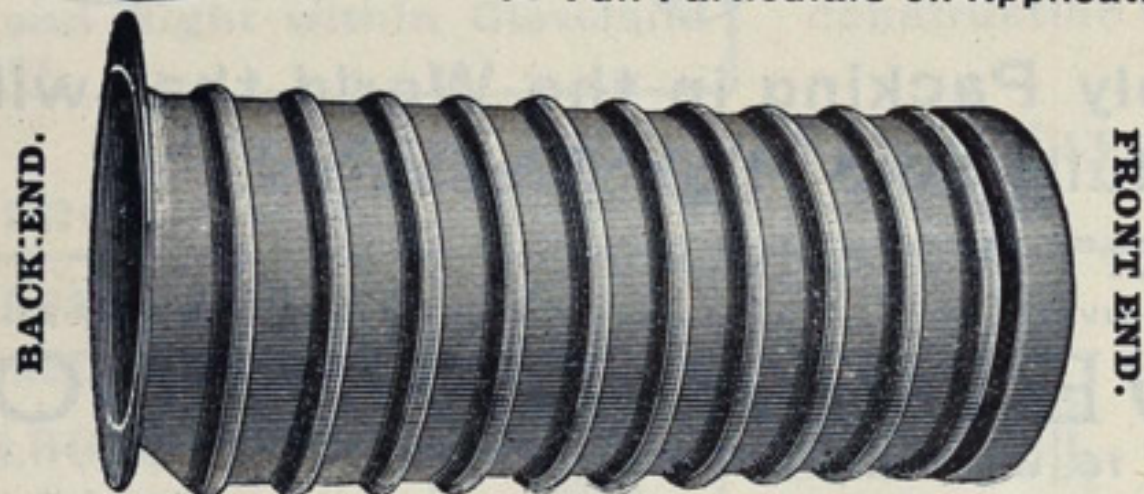
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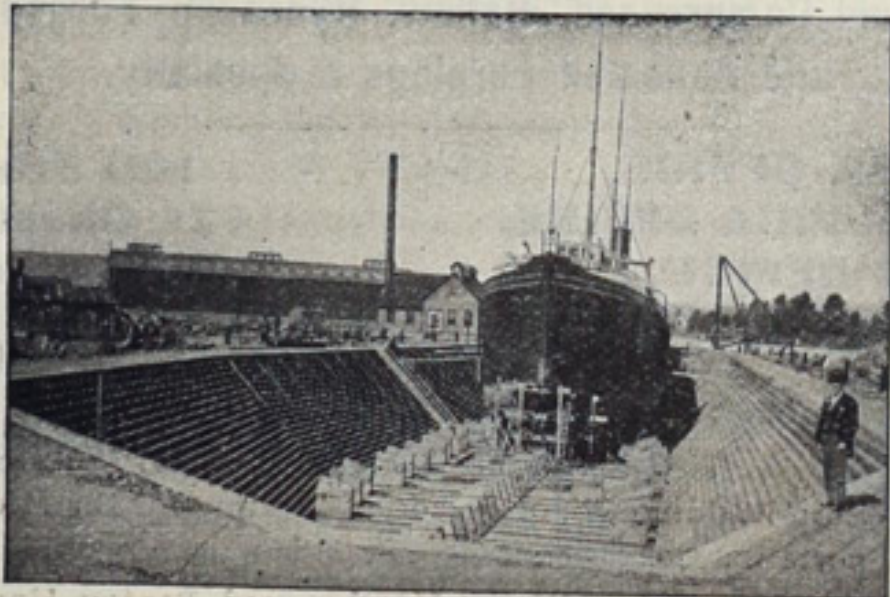
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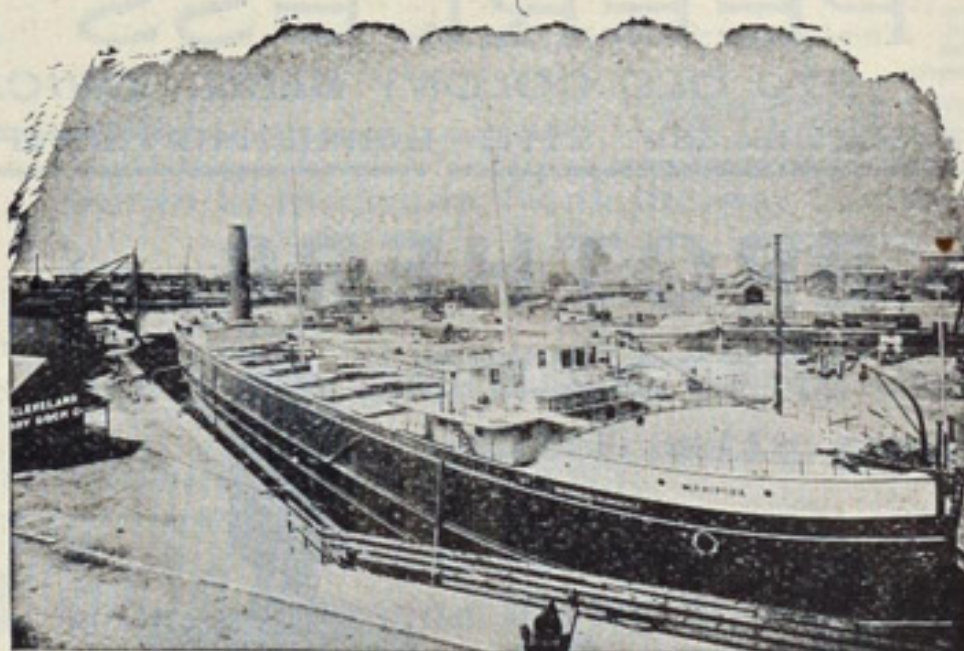
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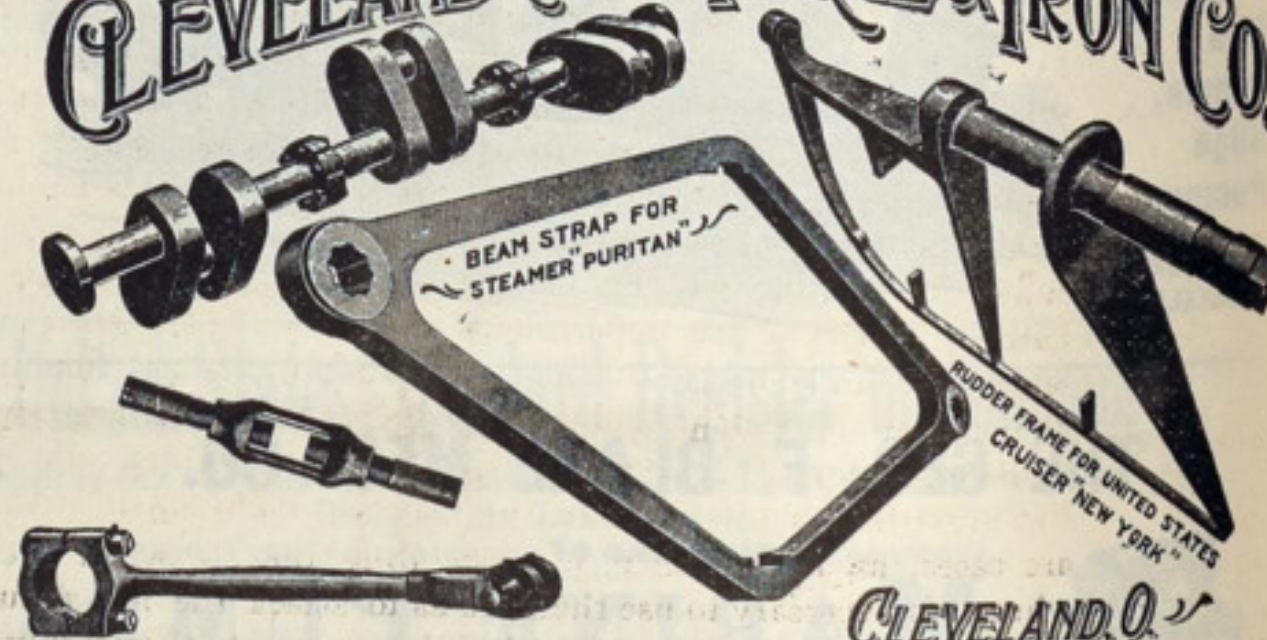
Dimensions of Dock:

Lth. over all, 360 ft.
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